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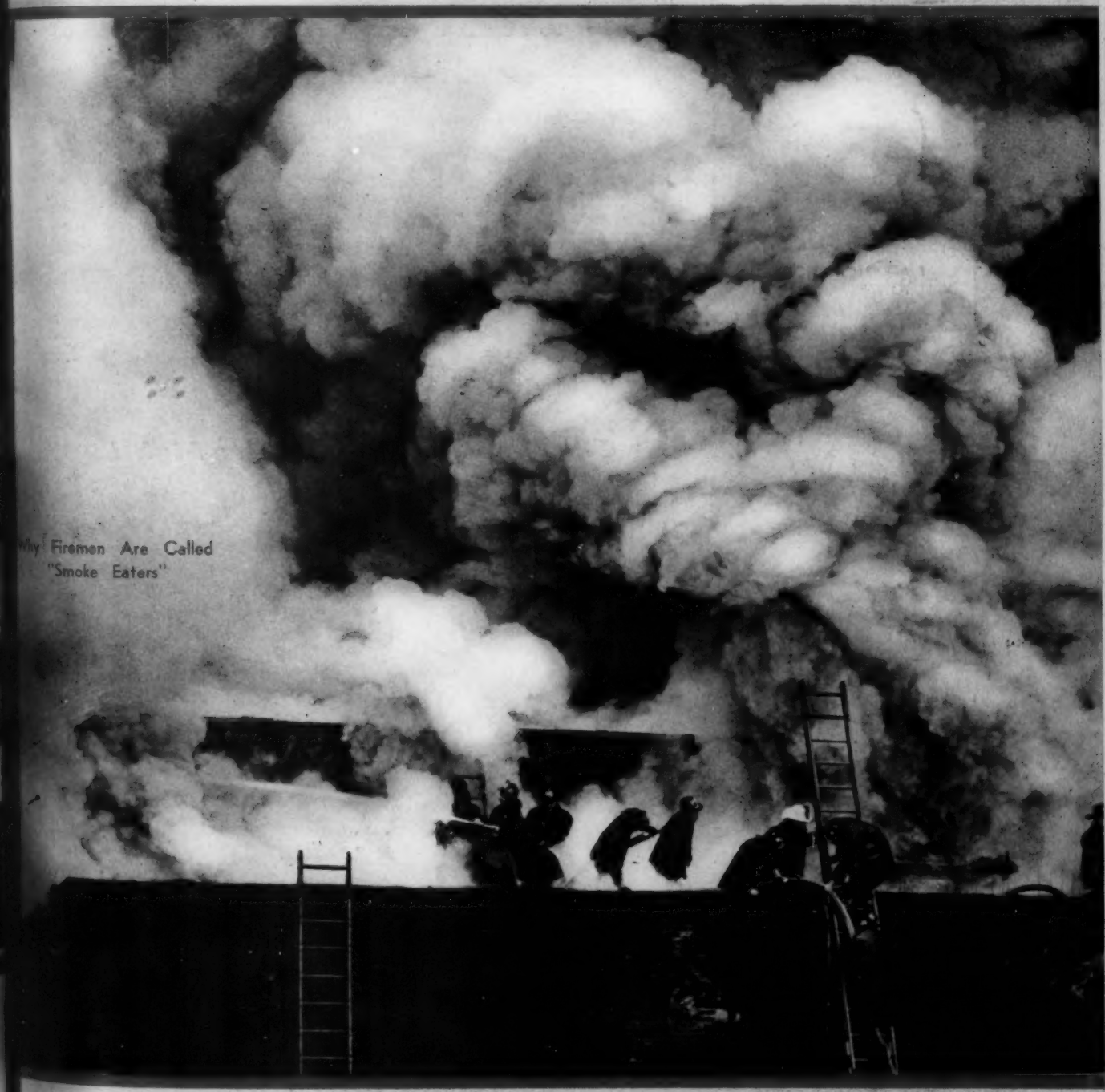
FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

91, No. 7 JULY, 1938 Member A.B.C.-A.B.P.



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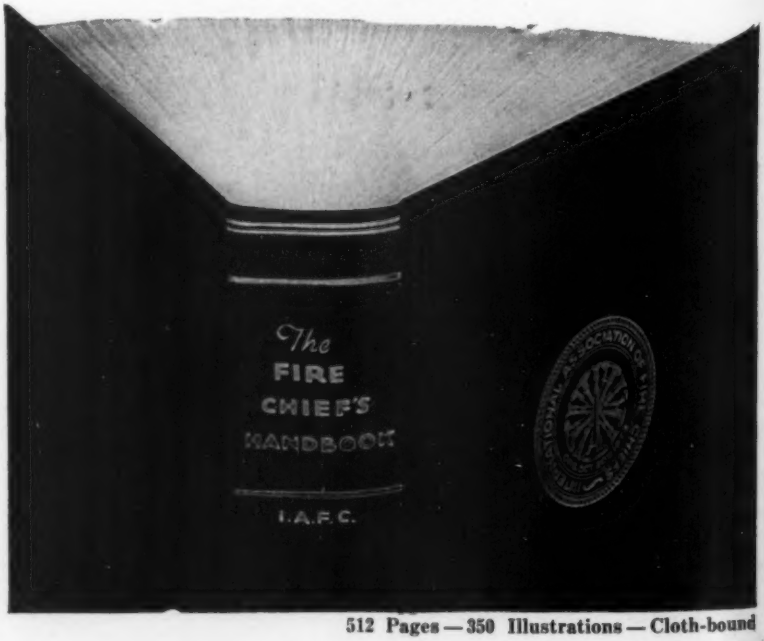

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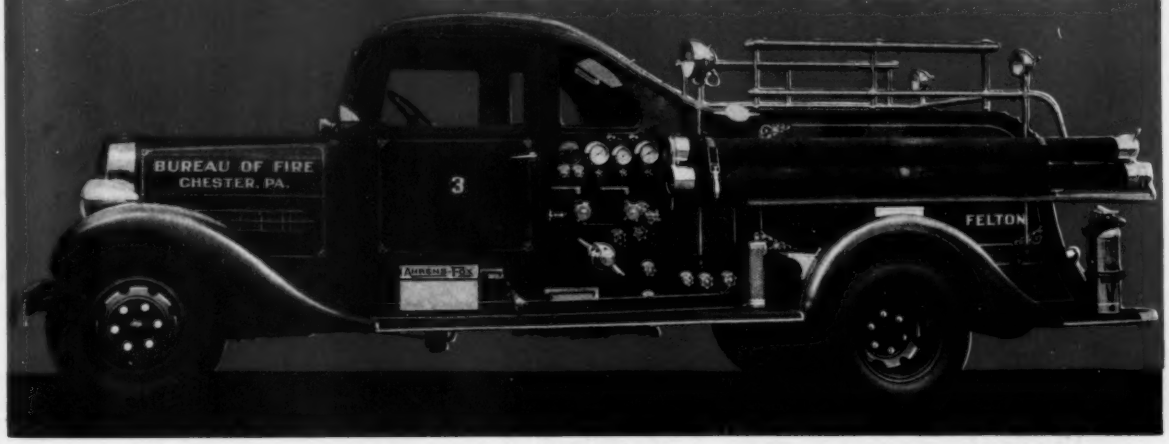

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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Good News!

WE are happy to report that new subscriptions to FIRE ENGINEERING are coming in very nicely these days.

● More than 300 progressive fire chiefs have joined our already large family of subscribers during the past few weeks. Of these, it is interesting to note, practically four-fifths are volunteer chiefs of places under 5,000 in population. Our aim has always been to serve the smaller and larger fire departments alike, and we are delighted, naturally, to have such fine recognition of our efforts.

● Welcome to our new friends — and thanks again to our old friends for their continued loyalty.

The Publishers

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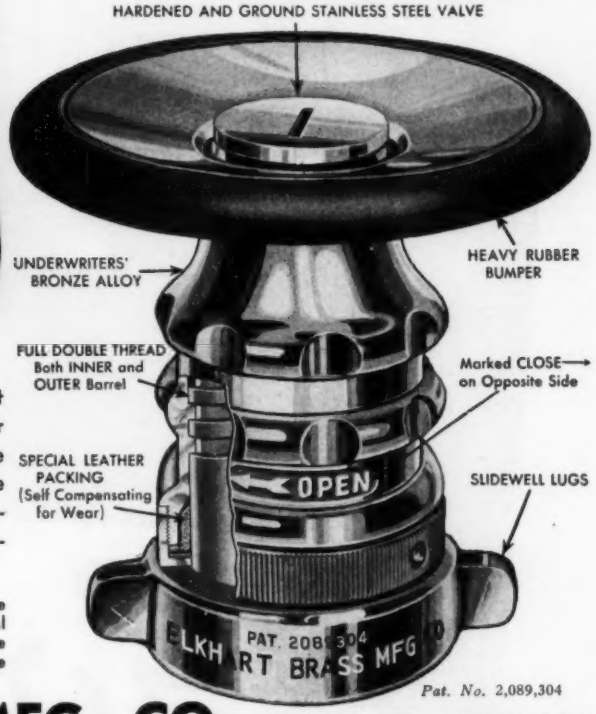
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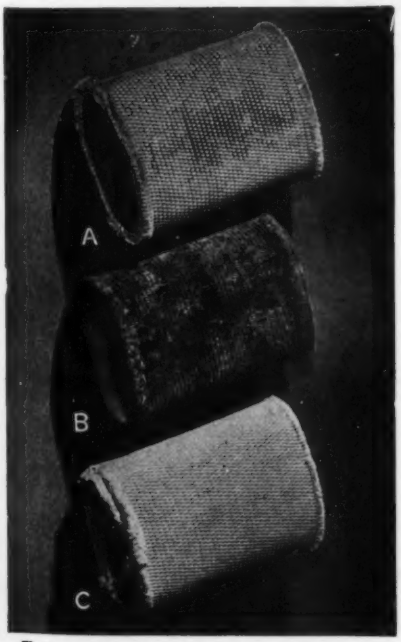

A Not processed for mildew protection.
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Unretouched photo showing results after samples were saturated with water and exposed to moist atmosphere for six months.

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FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 91 JULY, 1938 No. 7

With the Editor

PWA Help For Fire Departments While the Public Works Administration at Washington has definitely ruled against grants for the purchase of fire apparatus alone, it still continues to make money available for apparatus, when purchased in connection with other municipal improvements.

In the first tabulation of grants just released for publication by the PWA, grants for four cities have been approved where fire apparatus is to be purchased in connection with water works improvements. The first PWA financing in 1934 included many grants for construction of new fire stations and purchase of motor apparatus therefor.

The solution to the problem of getting federal money for apparatus replacement in Fire Departments thus seems to be through including the cost thereof with other Fire Department or Water Works improvements.

Those planning to ask for PWA grants are reminded that requests must be in before September 30, at which time PWA books will close.

* * *

More Power For Pumpers Two years ago the I. A. F. C. Committee on Cooperation with the National Board of Fire Underwriters suggested to the Board that pressure and capacity requirements of motor pumping engines be increased.

Since that time the National Board, in connection with a committee of the National Fire Protection Association, have been at work on new pumper specifications, which are now in committee. The new specifications require rated capacity at 150 pounds pressure, instead of at 120 pounds, under the old specifications; 70 per cent of capacity at 200 pounds, instead of 50 per cent of capacity; 50 per cent of capacity at 250 pounds instead of 33 per cent of capacity.

These new requirements mean, in addition to changes in pump design, 25 per cent increase in engine power at capacity, 40 per cent increase at 200 pounds pressure, and 51 per cent at 250 pounds, or an average increase of 38.7 per cent.

While it is generally recognized that full engine power is not often employed, it is considered highly desirable that a pumper have a reserve which can be called into play in the event of a big fire, where additional pressures and increased discharges may prove vital.

In the case of smaller municipalities, the more powerful units are expected to prove equally valuable. Poor distribution of water mains and hydrants, as well as the presence of smaller sized mains than in the larger cities, mean longer stretches. Longer stretches require higher pump pressures and greater power at the engine. Furthermore, protection of suburban properties almost invariably calls for long hose layouts.

Stepping up the power requirements of pumpers therefore appears to be a progressive move, and if a city or town can afford to buy the bigger unit, it seems the sensible thing to do.

Fred Sheppard

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The Community Oil Fire Hazard

A Demonstration of the Principles Governing the Conduct of Flammable Liquids and Vapors, and Their Fire Hazards

By JOHN T. HOWELL
Fire Protection Engineer,
Union Oil Company of California

THE Standard dictionary gives eleven definitions for the word "fire." There are only two which are common; the "friendly" fire and the "unfriendly" fire. We are all familiar with the "friendly" fire and there is no debate on that score. There may be some differences of opinion regarding an "unfriendly" fire. Regardless of that possibility we can agree on the following statement:

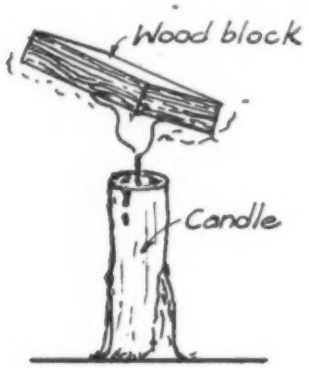


Fig. 1

"Before we can have fire at all we first must have something that will burn. We call it fuel."

Let us now draw a horizontal line on the blackboard and identify with the word "FUEL"———:

FUEL

Here we have the base of every fire; something that will burn.

On the table here we have a number of pieces of common fuels, things which burn every day somewhere. Yet I can take this block of wood and hold it over the flame of a burning candle (Fig. 1) and we see it does not take fire. Of course the block is heavy and solid but here is a piece of cloth. We substitute it for the black of wood and the results are the same.

Now let us try a liquid. In this bottle there is some kerosene. I shall pour some of it out in a pan. The pan is filled to a depth of about ¼-inch.

If we hold a match over the surface (Fig. 2) there is no burning. Even when we dip the match directly in the kerosene the result is the same. Complete immersion of the match flame extinguishes it. If we substitute a lighter product such as Stoddard Solvent the results are the same. A match flame held directly above the liquid causes no burning; dipped quickly into the liquid, it is extinguished. The same with a burning card.

To carry this experiment further I shall moisten this calling card with a little of the liquid—just enough to form a thin film. If we hold a match to the card we find that it burns slowly. But again by dipping the card in the very liquid with which it is moistened, we can extinguish it.

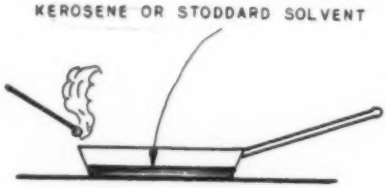


Fig. 2

Now we are beginning to learn something. When we held that match flame against the calling card, a tiny portion of the thin film of solvent was heated to the point where it gave off a vapor, and it was the vapor which burned. Because the solvent in the pan has not been heated, it did not give off vapor, so there was nothing to burn. We know now that *solids or liquids do not burn, it is only their vapors which do so.* If we heat all of this solvent on a stove then all of it will be at a temperature that will produce vapor. Let us try it. I place it on this stove. It will not take very long for it needs to be heated to about the temperature of the water you use for shaving,—105° to 110° F. A match flame held at edge, after solvent has been heated will ignite vapors.

Note: Take pan off stove before attempting to ignite vapors with match flame.

Not All Oils Require Heating

Some oils will give off vapor at the temperature of the surrounding air. This may be as low as 40° F. Included in these are gasoline, naphtha, benzine, alcohol, paints and numerous other household articles. If we pour gasoline into a pan and hold a match flame above it (as in Fig. 2) the vapors will immediately burst into flame. So let us go back to that line we drew on the blackboard and revise it so that it looks like this:

FUEL (VAPOR)

Further Proof

Here I have a jar of gasoline. On top of the jar is a sparking device connected to a battery. With it we can produce the same sort of spark we get in the motors of our automobiles. I shall hold it up so that all may see. Notice that when a spark is produced beneath the liquid level (Fig. 4), there is no burning. Here we have a positive proof that the liquid does not burn.

But, we say the vapors do burn, so let's move the spark up into the vapor space. Again we see (Fig. 5) there is no burning. That may be surprising. Let us try something else.

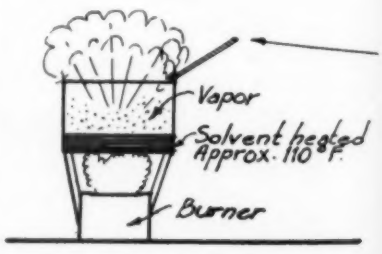


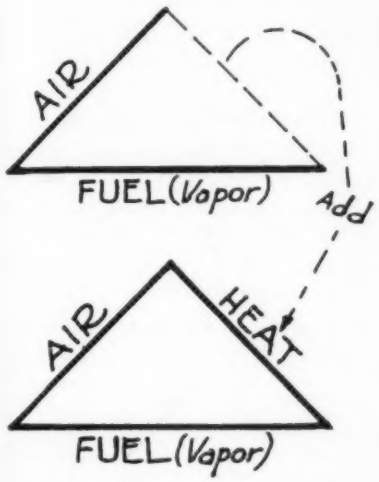
Fig. 3

This time we move the spark to a point just above the mouth of the jar (Fig. 6) and there burning occurs because that is the only point where the vapors inside the jar have

(Lecture delivered to the graduating class of the Portland Fire College, Portland, Ore.)

an opportunity to combine with air. So we establish another fact: *Unless there is air present, there will be no burning.*

Now we go back to that line on the blackboard and make it look like this:



What else do we need to build a fire? Here in this pan of gasoline (Fig. 7) we have fuel (vapor) above the gasoline and air all around that vapor—and yet we have no fire and won't have until we add one more thing—heat. When this is done our "fire" looks like the triangle, as illustrated. Whenever we put that triangle together we have a fire whether we want it or not. That combination will cause it regardless of what other condition may exist; whether it be hot or cold, wet or dry, makes no difference. Also, the fire will be the same whether the fuel was gasoline vapor, wood vapor, coal vapor, or

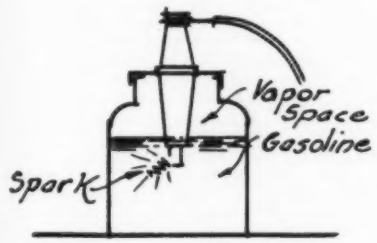


Fig. 4

vapor from any other combustible substance. This is good to remember—to save for the time when that fire is to be controlled.

The fires which we have seen here were relatively small, yet they came into being and behaved in exactly the same way they would have had they been larger. The gasoline vapors, in the small pan, combined with air and ignited from the match flame in the identical way that vapors from a large body of gasoline would take fire.

The behavior of the spark in the jar of gasoline, below the liquid, above the liquid, and in the mouth of the jar is no different from what would happen in a tank truck under similar circumstances. Compare Fig. 8 with Figs. 4, 5 and 6 and this is

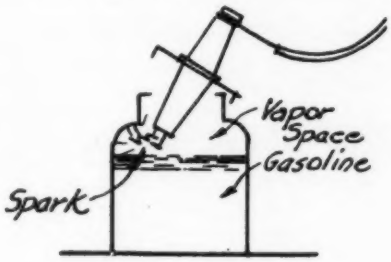


Fig. 5

easily understood. Notice the physical conditions are identical. This would be true of any other container, such as a delivery bucket, a drum or fuel tank. Fire exists solely because of an immutable natural law. There is no way in which we can create it in another manner. For example, just because we are afraid a fire will occur does not cause it to occur.

Explosions

Now that we have gone through the problem of ordinary fires let us take up another and more popular phase of our subject,—Explosions. In using the term "popular" I am thinking of the newspapers and the public more than you and me. Cer-

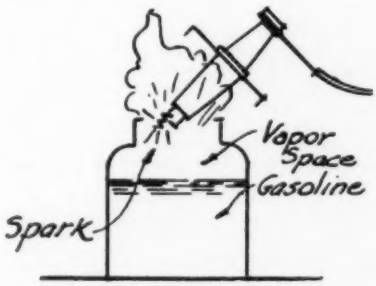


Fig. 6

tainly the term is not popular with the oil industry and I am sure it is no more so with you gentlemen. With the average newspaper reporter no gasoline fire can occur unless it originates as or terminates in an explosion. The story of an open tub of gasoline burning quietly in the middle of the street lacks spectacularity and therefore has a relatively low news value, but if it can be said that the gasoline "exploded" and thus endangered the lives and property of everyone within blocks of the site, it becomes "front page" news. This is especially true if the item is supplemented by a picture showing great clouds of billowing black smoke just as if the color or quantity of smoke given off by a burning sub-

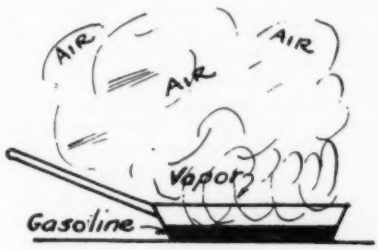


Fig. 7

stance is an indication of the severity of the fire. In naval operations, great smoke screens are laid down by airplanes and ships without fire at all. You and I know that a gallon of carbon tetrachloride, an incombustible liquid, when heated will give off more black smoke than a drum of burning gasoline.

Tank Truck Explosions

Every so often we hear of a tank truck "explosion." Did you ever hear of one exploding while it was traveling down the highway? While parked at the curb? Neither have I! We do know of trucks which have had fires on them because of burning brakes, flat tires, faulty wiring, collisions or overturning. You nor I have ever known of even one case where the fire *originated* in or *because* of its

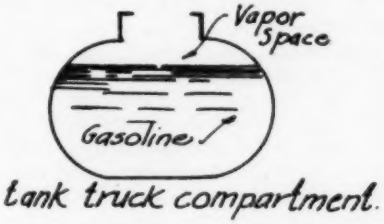


Fig. 8

gasoline cargo. Yet in almost every instance we are told "the gasoline exploded." Let's see what is behind that statement.

Here I have an ordinary 100 cc. capacity test tube. The liquid in the tube is plain water. We all know that when plain water or any liquid is heated it expands, increases in vol-

ume. So if we hold the tube over this candle flame the water will heat up and expand. If we get it hot enough the expansion will be sufficient to cause the water to overflow the tube. I shall draw a crude picture of the tube. Alongside, I shall sketch a section of a tank truck carrying gasoline. Due to a collision, a spill or other reason, gasoline is burning underneath the truck (Fig. 9).

Notice that the general conditions in each case are the same. Therefore, we have an identical situation to deal with; in the case of the tube, expanded water would overflow the top while in the truck the gasoline would overflow the dome. If we were to put a cork in the tube, which I will now do, we know that just as soon as expansion takes up all the vacant space in the tube a pressure will be built up. Eventually this pressure would increase until the cork would be blown out of the tube. The same

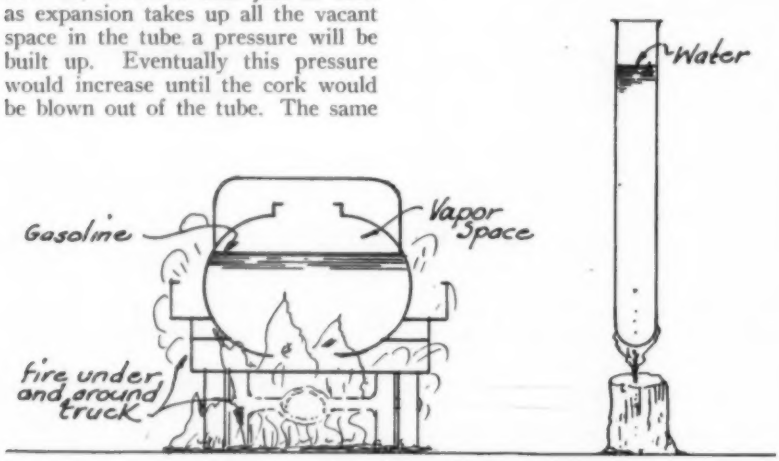


Fig. 9

thing would happen in the case of the truck if we were to place a tight cover over the dome,——*but* if we drill a hole up through the center of the cork, any pressure which tends to build up will be relieved through that hole. Likewise if we cut in opening in the tight dome cover of the truck (a pressure relief valve), any pressure generated will be relieved through that opening. Provided, however, that the opening in the cork or the dome cover is large enough; certainly a pin-hole opening would not be sufficient for adequate relief. But so much experience and competent knowledge is at hand that calculation is easy. The most generally accepted data for emergency relief venting is found in the N.F.P.A. Recommended Ordinance.

Whenever adequate relief has not been provided and the truck is involved in a fire, accompanied by a rupture of the tank, we are told "the gasoline exploded." Such a statement is definitely untrue. What really occurred was identical to what happens to a boiler that has no "pop valve" or an air compressor tank whose relief valve is stuck. The presence of the gasoline had nothing whatever to do with it except to follow the natural law of expansion just as water, milk, or any other liquid might do. These "explosions" are no more than "boiler explosions."

(To be concluded)

Many Attend Illinois School

More than five hundred persons attended the fourteenth annual fire school of the Illinois Firemen's Association, held at the University of Illinois, Champaign, Urbana, June 14 through 17. Attendance has grown steadily since the 219 persons enrolled in 1925. Roy W. Alsip, Secretary of the Association, is credited with carrying the main load of this important work during these years.

An analysis of the registration showed that 156 communities were represented—111 volunteer and 46 paid departments.

The school is conducted on the lecture and demonstration plan. The students were urged to bring clothes, so that they could participate in the drills and evolutions.

The lecturers included:

George Knol, President, Illinois Firemen's Association; Sherman V. Coultas, Fire Marshal of Illinois; Peter Pirsch, President, Peter Pirsch & Sons, Kenosha, Wis.; C. B. White, Chemist-Engineer, American-LaFrance Foamite Corporation, Elmira; Art Espey, Mine Safety Appliances Company.

Chief Tom Brooks and Chief Thad Fife, State Fire Marshal's office; Albert Kammin, Assistant Chief, Crystal Lake; Chief John Mersch, Evanston; Chief John E. Hutchins, Macomb; Richard Vernor, Manager, Fire Prevention Bureau, Western Actuarial Bureau, Chicago; Chief Elmer Dicke, Downers Grove; Chief Waldo Erickson, Western Springs; Chief C. E. Rettinghouse, Centralia; Frank Broz, Water Superintendent, Cicero; A. H. Gent, Engineer, Illinois Inspection Bureau, Chicago; Chief William R. Stoneham, Wood River.

Elmer W. Weidler, First Vice-President, and George L. Chain, Historian of the association; Chief Walter A. Finklein, Belleville; Chief John Link, Blue Island; Chief Connel Nicol, Sterling; Chief James Marsh, Granite City; Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriter; Chief Joe Valentine, Rock Island; Chief August Schneider, DuQoin; Anthony J. Mullaney, Deputy Chief, Chicago; Chief John E. Hutchins, Macomb; J. Burr Taylor, special representative, Western Actuarial Bureau; Chief J. W. Just, Engineer, Western Factory Association, Chicago; R. E. Whalen, Fire Marshal, Elgin, and George H. Anderson, Assistant Fire Marshal.

The college next year will be held June 13 through 16, at the university, as usual.

Wallen Chief at Olean, N. Y.

Frank W. Wallen has been named Chief of Fire Department at Olean, N. Y., to succeed the late Chief L. G. Rodgers. Capt. John O'Hara who was Acting Chief for several months and a veteran fire-fighter, passed away on February 22.

Connecticut Firemen to Meet

The fifty-fifth annual convention of the Connecticut State Firemen's Association will be held in the town hall auditorium at Milford, Conn., on August 19 and 20. Milford was selected following an invitation extended the association by the local Chamber of Commerce and the Arctic Engine Company, which will celebrate its 100th anniversary this year.

THOMAS F. MAGNER

Theft of Fire Alarm Box Parts

According to the report of the Fire Brigade of Sydney, Australia, and suburbs, there have been a number of thefts of parts from fire alarm boxes. Frequent inspections are made to minimize these thefts.

During the year there were 2,848 fires and the brigade received 1,099 false alarms. The number of fires last year was 1,039 less than for 1936.

Volunteers Break Records

Several state records were broken at the tournament of the Nassau County Firemen's Association held at West Hempstead, N. Y., on June 18. Something new for the association was tried in volunteer contests. It was a three-man ladder contest to obtain the best time made by a three-man team in running to and climbing a ladder, the time taken the moment the last man had both feet on the erected platform.

The rules of the New York State Firemen's Association were followed in conducting the tournament.

One volunteer was hurt when he was spiked in the foot by a ladder. He was anchor man of a team, and the sharpened end of the ladder pierced his foot when he slipped.

The new officers of the association are Roy Westlund, Cedarhurst, President; Vice-Presidents, Henry Gebhardt, Hicksville; Edward C. Smith, Manhasset; Mario A. Pollini, Malverne, Edwin Powell, Westbury; James McInnes, Jr., Syosset, Secretary; John H. Schultz, Sea Cliff, Treasurer.

A meeting of the association will be held at Atlantic Hook & Ladder Company, Port Washington, Long Island, on July 20.

Pyromania—a Cause for Growing Concern

An Intensive Study of the Causes of Pyromania, Methods of Combatting It and the Confinement and Care of Those Afflicted with the Disease

By GEORGE O. Q. MANSFIELD
Chief of Fire Investigation
Massachusetts Department of Public Safety

(Concluded from the June issue)

HERE is the law which has to do with *defective delinquents and drug addicts.*

Chapter 123—*Section* 113—*Defective Delinquents and Drug Addicts.*

"Section 113. At any time prior to the final disposition of a case in which the court might commit an offender to the state prison, the reformatory for women, any jail or house of correction, the Massachusetts reformatory, the state farm, the industrial school for boys, the industrial school for girls, the Lyman school, any county training school, or to the custody of the department of public welfare, for any offense not punishable by death or imprisonment for life, a district attorney, probation officer or officer of the department of correction, public welfare or mental diseases may file in court an application for the commitment of the defendant in such a case to a department for defective delinquents established under sections one hundred and seventeen and one hundred and twenty-four, or to a department for the care and treatment of drug addicts, established by the governor and council under authority of said sections. On the filing of such an application the court may continue the original case from time to time to await disposition thereof. *If, on a hearing on an application for commitment as a defective delinquent, the court finds the defendant to be mentally defective and, after examination into his record, character and personality, that he has shown himself to be an habitual delinquent or shows tendencies towards becoming such and that such delinquency is or may become a menace to the public, and that he is not a proper subject for the schools for the feeble minded or for commitment as an insane person, the court shall make and record a finding to the effect that the defendant is a defective delinquent and may commit him to such a department for defective delinquents according to his age and sex, as hereinafter provided.* If, on a hearing on an application for commitment as a drug addict, it appears that the defendant is addicted to the intemperate use of stimulants or narcotics, the court may commit him to a department for the care and treatment of drug addicts if and when such a department is provided."

Incidentally, this law provides for examination by proper physicians who shall report to the Court as to the condition of the defendant. These physicians are usually Superintendents of two different State Insane Hospitals, who have a staff of Social Workers to assist them in the actual examination, and also the preparation of family histories, and other pertinent features, in arriving at a conclusion.

This method is proving most beneficial, not only in fire cases, but also in all criminal cases.

You can readily see the benefits of this procedure, because if a person suffering with *pyromania* is merely thrown into jail, and then released, he would be back in Society and again set fires. In Massachusetts, we have been able to keep such persons out of circulation, so to speak, as there are many individuals now confined who will never be released.

As I said at the outset, the answer to the cause of *pyromania* has not been found, and while this is so, nevertheless, much has been learned about the subject, and perhaps in the not too distant future *psychiatrists* and *psychologists* may give us that much looked for answer. As to what we have learned about the subject, we now know the characteristics of those thus afflicted and, at least, we can now more readily detect and apprehend such persons.

Characteristics of Actual Cases

In specifying some of these characteristics, I am drawing from actual cases which I have personally encountered in my eighteen years connection with the State Fire Marshal's office in Massachusetts.

We will first take the basic characteristics which are—

Insanity
Imbecility
Epilepsy
Sex perversion
Sex degeneracy
Abnormal sex desires
Intoxication
Masturbation
Painful menstruation
Menopause.

Secondary Characteristics

Next, may I list the secondary characteristics, which include:

Excitement of watching or
Helping to extinguish a fire, gaining pleasurable relief or satisfaction from such, desire to play a hero's role in the discovery of the fire, and rescue of occupants of the building, or
To attract attention to himself, or
To enjoy mingling with the crowds that gather at a fire, or
Cruel disposition to watch animals perish in a barn fire, or
To enjoy the horrors of people having difficulty in escaping from a burning building,
And many other common characteristics with which you are familiar.

Now, that we know more about these individuals, perhaps something as to the methods of apprehending them would be pertinent at this time.

Best Results by Patrolling Fire Area

In our efforts to apprehend such persons, it will be necessary to adjust the procedure to each case, as you will find, in most instances, that every case is different and peculiar to itself.

We, in Massachusetts, have found the best results in patrolling the area where fires occur:

To pick up all suspicious acting persons;
To check up on all suspects, which would include all the types already mentioned;
To trail such suspects;
To watch and observe persons at the scene of such fires, because it is a trait of the fire maker of this type to remain at the scene, or to return

to the scene, for it is only through watching the fire that he or she derives the satisfaction that he or she craves.

Then, there are those who set fires in certain types of buildings, such as churches, schools, barns, etc.

So, consequently, it would be proper to put a watch on all such buildings, as we did in a certain case in Worcester, Mass., where churches were being set afire, and in due time the guilty person was apprehended, as he admitted the church fire.

Any other methods that you might devise, of course, would be proper.

Another illustration of a certain type of fire is found in the case of a travelling salesman who set fires in linen closets in a dozen hotels, in as many cities where he had registered.

If we cannot find the answer to the cause of *pyromania*, we, at least, know what to associate it with.

Root of Most Arson Cases

As I delve into the subject and study actual cases, I am becoming convinced that the great majority of cases have a sexual root.

Sex degenerates
Sex perverts and
Persons with an abnormal sex desire
are unquestionably responsible for a high percentage of set fires.

In years past, little attention was given to this angle, and it is strange that the sexual root of *pyromania* had been entirely overlooked by most criminologists.

One of the first cases I encountered eighteen years ago, I found was a sex case, due to *masturbation*. The subject confessed that he set fires for this reason, and derived sexual gratification while watching the flames.

Since that time, I have had *eleven* other cases which I personally investigated; while there were many others which were conducted by officers of this Department.

Strange as it may seem, a study of the various cases fails to show the cause of their condition, because, in many instances, family background has been excellent. Nor, can you ascribe it to any particular class. For instance, in twenty-five cases I have studied, I found a,—

Banker
Minister's son
Fire Chief's son
College Professor's son
Lawyer's daughter
Fire Captain's son
Artist's son

and I could go on down the list and enumerate others:

The high and the low
The educated and the uneducated
The poor and the rich, and
The Doctor, the Butcher, the Baker and the Candle-Stick Maker.

Case Histories of Convicted Firebugs

Here are a few case histories of convicted firebugs suffering from pyromania:

Case No. 1.

Age—26 years.
Son of hardworking mechanic.
Mother and father good appearing.
Nothing unusual in family history.
198 false alarms.
46 set fires.
Property involved, upward of $5,000,000.
Loss paid, $247,621.
Churches, schools, Town Hall, G. A. R. Hall, factory, barns, theatres—No houses—did not wish to endanger human lives.
False alarms first.
After awhile, not sufficient thrill.
Then small buildings, and finally, larger ones.
Craves excitement.

Case No. 2.

Age—30 years.
Banker's son.
Peeping Tom.
Masturbation.
High School—Prep School—College.
Family history, excellent.
Kept diary, and when arrested complete record of all his fires found in diary; also running cards of Fire Departments of several cities and towns.

Case No. 3.

Age—17 years.
Imbecile.
Lowest type imaginable.
Family history bad.
Degeneracy all along line.
Venereal disease.
Born out of wedlock.
The product of degeneracy.
Lowest mentality, but, however, clever and cunning.
Burned two barns at a State Institution where he was confined.
Wanted to see *cows* die in fire, and enjoyed their suffering.
Not discovered until transferred to another Institution, where he set 12 fires, in hopes of escaping.
Stole matches and secluded them in lining of his coat collar.

Case No. 4.

Age—25 years.
Foreigner.
Parents normal.
Insanity two generations back.
Sex Pervert.
Mutilitated nine year old girl, and strangled her to death.
Now serving life in State of Rhode Island.
Set fires in Massachusetts to gratify *sex desire.*
Arrested for these fires.
When apprehended, discovery was made of small red automobile *buried in sawdust* in his barn.
Recalling that the Rhode Island Police were looking for a little *red car*, in connection with this murder, they were called into the case, and the car dug out and *evidence* found in the car which connected him with the murder.

Case No. 5.

Age—22 years.
Married and divorced.
Family background good.
Sex Pervert.
Unnatural Acts.
Realized fire setting was wrong.
Wrote threat notes to herself to throw suspicion on others.

Case No. 6.

Age—68 years.
Forefathers came over in Mayflower.

His Specialty Was Barn Fires — Set 12 Barn Fires Before He Was Caught — Burned Two Barns at School for Feeble Minded. Set 12 Fires in Insane Hospital

One of oldest and best families of the Community.
Intoxication.
Burned barns when drunk.
No sex element.

Case No. 7.

Age—22 years.
Good family history.
Well educated.
Religious fanatic.
Burned churches and schools.
When apprehended, was employed as telephone switch-board operator in Hospital containing 300 bed patients.

Case No. 8.

Age—30 years.
Poor family history.
Convicted thief.
Started *riot* in jail.
Set fires to be *a hero.*

Case No. 9.

Real estate dealer's son.
Good family background.
Annoyed members of the opposite sex.
Set 12 fires.
Masturbation.

Case No. 10.

Age—27 years.
"Peeping Tom."
Family history good.
Burned churches—$750,000 loss before being apprehended.

The problem of *pyromania* is of great importance, no matter how we look at it, whether it be from the viewpoint of the apprehension and proper treatment of the individuals confined, or from the dollar and cents standpoint; because, as to the latter, millions of dollars worth of property are burned annually by this type of fire maker. What is destroyed by fire is lost forever, and, therefore, we have losses from the social point of view.

These individuals are certainly a menace to Society in many ways, and as I have illustrated by these few cases, they are a great moral risk, as you have seen.

In concluding, may I state that, if what I have written here will aid you in the problem which this subject presents, and aid, not only in the apprehension and segregation of these unfortunates, but in advancing the study of these cases from a *pathological* standpoint, I will feel repaid for my efforts. May I emphasize that justice to the individuals involved in fire making, where the motive indicates *pyromania,* demands a thorough examination of the cases, in the hope of determining the responsibility.

HOW CAN FIRE DEPARTMENTS SECURE FINANCIAL AID FROM THE PWA?

Refusal to Make Grants for Purchase of Apparatus Alone Leaves But One Possibility of Getting Money

ON June 14 a committee of the International Association of Fire Chiefs, headed by President Daniel B. Tierney, waited upon the Public Works Administration at Washington in an endeavor to have the PWA authorities declare motor fire apparatus eligible for federal grants.

A strong argument was presented by the I. A. F. C. committee, and it was hoped that the request would be granted. However, under date of June 18, the following letter was received from H. A. Gray, Assistant Administrator of the PWA:

"Federal Emergency Administration of Public Works
Washington, D. C., June 18, 1938.

"Mr. Daniel B. Tierney, President, International Assn. of Fire Chiefs, 24 West 40th Street, New York, N. Y.

"MY DEAR MR. TIERNEY: This will acknowledge and thank you for your letter of June 14 to the Administrator, urging that municipal fire apparatus be placed in the class of projects in the financing of which the Public Works Administration may aid by way of grant or loan and grant. You point out that in several instances in the past the Administration has approved projects of which fire-fighting equipment constituted a part, and you suggest that it would be no appreciable deviation from precedent were grants to be made available for the purchase of such apparatus alone.

"I am obliged to tell you, with the greatest regret, that it will not be possible for us to deviate from precedent in any degree whatever. There is nothing in the so-called Relief Bill which would permit us so to deviate, or to include in the Public Works program a project consisting entirely of equipment.

"Sincerely yours,
"H. A. GRAY,
"Assistant Administrator."

Following receipt of this letter, the Headquarters office again communicated with the PWA to determine what percentage of a federal grant for Water Works or Fire Department improvements might be applied to the purchase of fire apparatus. Mr. Gray again answered, as follows:

"Federal Emergency Administration of Public Works
Washington, D. C., July 1, 1938.

"Headquarters Manager, International Association of Fire Chiefs, 24 West 40th Street, New York, N. Y.

"DEAR SIR: This will acknowledge your letter of June 27.

"In determining the eligibility of Public Works projects which consist partly of construction and partly of the purchase of equipment, we have never attempted to draw a definite line, or to decide what percentage of PWA funds must be used for fire station construction work or what maximum allowance may be made for the purchase of apparatus. We have rather considered each case on its own facts, and in accordance with general principles.

"So far as a statement concerning general principles is material, we can say that a project consisting solely of equipment is ineligible, and that, in connection with a project involving construction, equipment will be considered eligible for inclusion only to the extent that its inclusion does not render the project heterogeneous and does not exceed the normal and customary equipment requirements for a project of such nature.

"For instance, a project involving the construction of a school building and the purchase of a ladder truck would be heterogeneous; a project for the purchase of a dozen pieces of motor apparatus and for the construction of a frame garage in which to house them would be sufficiently abnormal or unusual to be classed as ineligible; and a project which included the construction of a fire station designed to house two pieces of motor apparatus, and included in addition the purchase of three pieces of motor apparatus, the third piece to be used to replace an obsolete piece in an existing station, would have to be reduced in scope by eliminating such third piece, in order to meet the requirements for eligibility.

"Construction is the primary object of the present Public Works program and equipment (in the sense in which your organization is interested in equipment) should be regarded as secondary and incidental, but you may assure the members of your Association that the offices of our various Regional Directors will be only too happy to give preliminary advice or suggestions to any prospective applicant concerning the elements to be included in a given project.

"Sincerely yours,
"H. A. GRAY,
"Assistant Administrator."

Although the PWA cannot make grants for purchase of fire apparatus alone, as indicated above, many cities are to receive money for apparatus where the apparatus is included with other allied municipal improvements. For example, where a new fire station is to be built, the cost of apparatus may be included with that of the station and a grant of 45 per cent of the total may be asked of the PWA. Or the apparatus may be tied up with water works improvements. Four instances of such combined grants being approved recently by PWA are given below:

Midway, Bullock Co., Ala.—PWA loan and grant of $30,909 for water works system includes funds for purchase of fire protection equipment.

Paico, Rooks Co., Kan.—PWA grant of $14,727 for water works system includes funds for purchase of fire hose. Total estimated cost of project $32,727.

Rockwell, Rowan Co., N. Car.—PWA loan and grant for water works system

(*Continued on page* 315)

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Definitions

Hatchway: A horizontal opening in a floor. Should be automatically trapped in order to prevent fire from gaining access to other floors.

Hazard: The word "hazard" means the point of danger, or to be in jeopardy of danger. The fire hazard is the inherent quality or surroundings of a piece of property which make it more or less liable to destruction by fire. Powder or gasoline is hazardous. Frame dwellings are more hazardous than steel structures.

Hazardous Liquids: Ethyl ether, carbon disulphide, petroleum ether, benzol, toluol, xylol, oil of turpentine, cumol oil, fusel oil, solar oil, tar oil, toluidin, nitrobenzol, paraffine oil and napthaline and the like are classed as hazardous liquids.

Henequen: A Mexican fibre, also known as sisal.

Hip Roof: One that slopes four ways, thus forming angles called hips.

Questions

(To Be Answered in Next Lesson)

1. Assume a group of buildings in which a number of small manufacturing plants have been established for making miscellaneous articles, among them celluloid articles and shoddy goods. These buildings were formerly residences, some of brick, some of wood which have been converted into factories. These plants are divided by partitions that are frequently moved when there is achange of occupancy.

   Note what particular hazards exist in connection with this group of buildings. State what industries should be eliminated from this type of building. What special precaution should be taken by the Fire Department relative to such buildings in order to handle a fire to the best advantage?
2. Assume that a fire does occur at 3 p. m. in the above mentioned buildings, and that as Captain in command of the first engine company to arrive, you find that the fire has already gained considerable headway in a central building, as shown by the volume of dense smoke. Outline in some detail the proper method of attack and indicate all the necessary precautions that should be taken to save life and property
3. In the event of a commanding officer being notified of a fire having occurred, and extinguished by other than members of the department, what is his duty?

False and True Questions

(Is Each Question False or True? Answers in Next Issue)

4. T F—Owing to the grounding of machinery in industrial plants static electricity never causes dust explosions..
5. T F—Members of the department are required to be tactful and courteous in their dealings with the public at fires.
6. T F—A small diameter fire stream has a smaller effective range than a large diameter stream at the same pressure.
7. T F—It is best to use water streams on all fires.
8. T F—Electricity rarely causes fires.
9. T F—A shut-off nozzle is best for use on inside fires.
10. T F—One pint of water weighs approximately one pound.
11. T F—Owing to the magnetic separators installed on grinding machines, the entrance of foreign materials will never ignite the dust.
12. T F—The Chief Engineer of the department is the departmental officer who is responsible for the enforcement of the Rules and Regulations.
13. T F—Condition of quarters and apparatus shows the degree of cooperation between officers and members in the ranks.
14. T F—Decayed floor beams and cork dust in large quantities may cause an explosion.
15. T F—The location of a large accumulation of dust should be wet down with a spray from a fire stream when working at a fiire.
16. T F—Fire alarm signalling systems may be classified under two general heads; namely, automatic and non-automatic.
17. T F—Members of the department have no means of appeal or redress in connection with apparently unjust, improper or unfair orders given them at a fire by superior officers.
18. T F—Member of the department receiving a still alarm need only find out the location of the fire.
19. T F—Half-inch to ⅝-inch smooth tapered nozzles are generally used with 1½-inch interior standpipe hose.
20. T F—Hose taken up after a fire should be uncoupled, drained, and recoupled before being placed on the wagon.
21. T F—Good grades of interior standpipe are apt to leak slightly when water is first turned into them.

Completion Statements

22. With a given engine pressure, the longer the line of hose, the ..... the discharge.
23. In a factory where inflammable dust is produced in large quantities and where there are moving belts, dust explosions may be caused through ignition by .....
24. The device which keeps the water back from piping in a dry pipe sprinkler system is called a .....
25. By "slippage" in pumps is meant .....

Answers to Questions in Previous Lesson

1. Points of danger to life in this fire are: Fast spread of fire through building, cutting off avenues of escape of those within. (Problem does not state at what time fire occurred, nor does it state that early efforts of the department were needed for rescuing occupants of the building, so that it will be assumed that the fire occurred at a time other than during business hours.) The presence of gas, apparently in the basement, constitutes a serious danger to the men operating on the fire; upholstering and repair equipment on the top floor suggest the likelihood of presence of lacquers and varnishes. Explosion hazard of these is ever present.

Dangers to property include: Fire extending up through building involving the various floors; extending up through elevator shaft and involving the top floor, with its highly inflammable contents; fire extending across alley at rear involving exposed buildings; fire reaching adjacent buildings upon passing through roof; the highly inflammable contents of all floors, and particularly the top floor, mean intense heat as fire advances, and also will mean fast travel of the fire unless properly surrounded.

Proper venting over shafts as well as over stairwells, and proper coverage of exposures on various floors to guard against fire and heat rising through elevator shaft are absolutely necessary.

In view of the fact that I am in command of this fire for fifteen minutes, and have only three engine companies and two truck companies on hand in answer to the first alarm, my procedure would be as follows:

First assume command. Noting extremely hazardous conditions surrounding fire, I would immediately transmit call for additional apparatus, sending in either a second, or a second and a third alarm, depending upon the stage of the fire. As noted in the question, some of the men will be overcome by gas in the early stages of operation. Upon encountering this situation, I would immediately have gas shut off in the building, if this has not already been done; if I am unable to reach gas shutoff in the building; and if there is no shut-off on the outside, I would immediately notify fire headquarters to have the gas company send their emergency crew to handle this situation.

Assignment of apparatus would be as follows:

First engine company to be placed on street in front of building, stretching in two lines, one to cover the elevator shaft and one to cover the stairway leading to basement.

Second engine company to rear to stretch in through alley, two lines, one to cover stairway and the other to operate into basement from the rear of building, through windows or other openings which will likely be available.

If fire is coming out of basement at rear and threatening buildings across the way, the second of these two lines would be asigned to cover exposures.

Third engine company to take position on street near fire building and stretch in two lines, both to operate in the basement from street entrances

to basement, if such are available. If fire has gotten out of elevater shaft on any of floors above, these lines would be assigned to cover such floors. If gas condition, or fire condition, in the basement makes it impossible for the lines to operate in the basement, holes would be cut in floor and two cellar pipes put to work, one toward the front, and the other farther back in the building.

Assignment of ladder companies would be as follows:

First ladder truck company to open up for engine companies.

If sufficient men are available in this company, two would be sent to the roof at once to open up over elevator shaft and stairwells.

Otherwise, ventilation would be done by members of second truck company. Members of the second company would be assigned to assist engine companies in getting lines in operation and also to patrolling basements of buildings on both sides of fire building, as well as other floors of adjoining buildings. Survey will also be made by this company in the fire building, to make sure that fire is not extending vertically through concealed spaces. Members of the second due truck company would also ventilate by opening windows front and rear on the various floors.

The foregoing assignment takes care of the first alarm companies. Engines on other alarms would be ordered to stretch in lines to basement, operating through the floor by means of cellar pipes, if access could not be had to the basement otherwise.

If necessary, basement should be ventilated by opening floor (should other means of ventilation not serve the purpose). Ventilation might be accomplished by removing board in floor or by cutting holes in floor front and rear near windows, so as to let heat and smoke rise and pass out through the windows to the outside. Lines from second alarm engine companies would also be sent to various floors, in the event that there is danger of fire getting out on these floors. However, as the stairways and elevator shafts are covered by apparatus on the first alarm, it is assumed that this will not be required. As superior officer would have arrived with second alarm assignment, I would inform him of what action I had taken, and await further orders from him.

2. Inspections start in the basement or on the roof of a building. I would start in the basement and inspect each floor in order on up through the structure. No part of the plant would be overlooked, but instead, the inspection would be thorough. In the basement, particular attention would be given to storage of raw products; also the general housekeeping condition, insofar as rubbish, storage of fuel, arrangement of boiler, etc., are concerned. Auxiliary fire protection equipment would be inspected in this work, attention being particularly directed to the valves controlling sprinkler and standpipe systems. Housekeeping would likewise receive first attention on the other floors. Condition of plant from the standpoint of dust collection, refuse disposal, and a general observance of fire prevention ordinances would be given close attention. In addition to the industrial hazards, exits, exit sign, and facilities for egress in general would be taken into account.

Hazards in connection with candy manufacture include: cooking processes, nut roasting, starch bolting, drying, hard candy bench work, sugar pulverizing and chocolate coating.

Hazards of Chocolate and Other Candy Making

In chocolate making the hazards are bean roasting, winnowing, milling and cocoa drying, sifting and blowing.

In processes involving starch, powdered sugar, cocoa, etc., dust frequently accumulates on ledges. Such dust constitutes a severe fire hazard, because when mixed with air in proper proportions it is explosive. All lighting in rooms where such processes are carried on must be installed in accordance with fire prevention rules for hazardous places, and none but electric lights should be used.

In connection with sugar pulverizing, there is a grinding hazard, due to the possibility of pebbles or other brittle materials getting into the grinding machines and striking the necessary spark to ignite the dust present in those machines. Explosion may thereby result.

Electric motors must be enclosed, so as not to provide exposed sparking contacts, which might ignite dust. Where gas is used for chocolate coating, the flame should be at a safe distance from combustible materials. In connection with winnowing, the husks from the cocoa beans are very combustible, and should be blown or conveyed to fireproof bins or direct to the boiler. The grinding of cocoa is undoubtedly the most hazardous process in chocolate making. The dust, like sugar dust, is inflammable and very likely to cause explosive mixtures. The storage of raw stock is an important point, as it is usually quickly damaged by fire and in addition may create intense temperatures, once it becomes involved by fire.

Packing and shipping operations frequently entail considerable hazard due to careless storage and use of packing materials.

3. True; 4. True; 5. False; 6. True; 7. False; 8. True; 9. True; 10. True; 11. False; 12. True; 13. False; 14. True; 15. True; 16. True; 17. True; 18. True; 19. True; 20. True.

21. .....of danger of building collapse.

22. .....spontaneous ignition.

23. .....oil drippings will not reach flooring.

24. .....large.....

Correspondence

Aid System in Orange County, Cal.

To the Editor:

The Orange County Association of Fire Chiefs was organized in November, 1933, and has held regular meetings each month on the third Thursday. This group of Chiefs and Fire Commissioners has been the means of accomplishing many things for the service, by bringing together department heads.

We have a definite move-up system, operated under reciprocal agreements and it has worked out well. Another city can get immediate aid under our system without the necessity of the neighboring Chief of Department having to wait to get permission to leave town.

Our County Central Arson Bureau, organized five years ago, has reduced arson to a minimum in the county by extending the service of trained arson investigators to the Chiefs of small unincorporated towns, also to departments where full time investigators can not be employed, due to lack of funds.

This service has worked wonders, in that the arsonists have given us a wide berth here in Orange County and we are gradually accumulating a lot of information in the central files. Reports are entirely confidential and made in triplicate for filing with other agencies.

The present officers of the Association are: R. R. Davis, Chief Engineer, Fullerton, Cal., President; Percy Owen, Chief Engineer, Buena Park, Cal., Secretary; J. K. Sargent, Chief Engineer, Huntington Beach, Vice-President.

Regular meetings are held each month on the third Thursday. Meeting places are determined by rotation.

The next meeting will be held at Buena Park, February 17, at 7 p.m., with Chief Owens, host.

The last meeting was held at Anaheim, January 20, with Chief Nyboe, host.

Yours very truly,
F. W. Crooker,
Chief Engineer,
Newport Beach Fire Department,
Balboa, Cal.

* * *

Facts About Batteries

To the Editor:

In your "Round Table" discussion in the December issue, one department stated their batteries were kept at 1.225 specific gravity.

Following is some information that will be of value to any department that may not know what a battery should be to get the best results.

I have had sixteen years of experience and study, and there is still plenty I don't know, but whenever Fire Engineering has topics in the automotive field, I'm certain you will hear from me.

A battery is considered fully charged with a hydrommeter reading of 1.275 to 1.300 specific gravity, the temperature of the battery electrolyte being 70 degrees Fahrenheit, which is considered normal. Every ten degrees rise in the temperature will cause the specific gravity reading to drop .003 or three points, and vice versa.

A battery is half discharged at 1.210 specific gravity. The danger point of a battery is 1.250 specific gravity, and below this point the acid begins to attack the plates, and the battery plates sulphate. The lower the specific gravity, the faster sulphating takes place, and a badly sulphated cell will not come back to its full rated specific gravity, even when fully charged.

Freezing takes place under the following conditions: Fully discharged, specific gravity 1.120, 20 degrees F.; three-quarters discharged, specific gravity 1.160, zero; half discharged, specific gravity, 1.210, 20 degrees F. below zero; one-quarter discharged, specific gravity, 1.260, 60 degrees F. below zero.

Yours truly,
Bill J. Suddarth,
Master Mechanic, Fire Dept.,
Chickasha, Okla.

At the Baltimore Convention, E.A.F.C.

(L. to R.) E.A.F.C. Secretary, Chas. Clark with Mrs. Clark, Wayne, Pa.; Chief Chas. Greenfield, Arlington Works, Kearny, N. J.; Inspector John W. Caldwell, Penn. R.R.; Chief T. J. Phelan, Trenton, N. J.; Chief Jesse Fisher, Annapolis, Md., and Chief Ross B. Davis of Philadelphia, (re-elected President).

Eastern Chiefs at Baltimore Convention, Learn About

The Unusual Fire

By OTIS SMITH

ALL officers of the Eastern Association of Fire Chiefs were reelected at the annual convention held June 16 through 18. Entertainment included a boat trip on the Chesapeake, clam bake and chowder party, crab feast, high pressure demonstration, banquet, and an unexpected 5-alarm fire.

Several interesting speakers kept the meetings lively with accounts of their experiences. Speakers included Deputy Chief John J. T. Waldron, New York City; Dr. David Price, Department of Agriculture; Chief Daniel Tierney, President of the I. A. F. C.; Chief Howard Travers, Baltimore; Edward Warr, Chief of Salvage Corps, Baltimore, and several others.

The program opened Thursday morning with President Ross Davis presiding. James W. Minter, Maryland State Chaplain opened the meeting with a prayer. Mayor Howard Jackson, Baltimore, welcomed the visitors, followed by Governor Harry Nice. Chief Charles W. Greenfield, Arlington, N. J., gave the reply for the association.

The Convention Opens

Ex-Chief Richard Smith, Pittsburgh, reported the association to be in sound financial condition, but he cautioned the Chiefs to remember that the association would have a very low treasury after payment of a certain large debt.

New Industrial Hazards

The first address was given by T. Alfred Fleming, Director of Conservation, National Board of Fire Underwriters. Mr. Fleming's talk was on "New Hazards in Industry." He discussed first the storing of gasoline in underground tanks. He mentioned several instances of fumes from leaking tanks that had filled nearby buildings. Mr. Fleming said that all underground tanks should be given a pressure test at ten pounds to check on their fitness. Hazards in hospitals next came in for considerable discussion. Mr. Fleming described a machine used for producing artificial fever. The patient is enclosed in a zipper bag, which is padded with kapok. A wire carrying a high frequency current is then arranged on the bag. Several fatal fires have occurred recently from improper use of these machines. There must be no metal near the bag, even the metal zipper must be eliminated. Oxygen tents present a special hazard of their own. Careless patients may light cigarettes near the tent and cause an explosion if the tent is lifted. In the opinion of Mr. Fleming, such hazards should be isolated, so that only the hospital staff could approach them. He also said that hospitals should be better educated in avoidance of these hazards.

Joint Memorial Service

The remainder of the morning was devoted to a joint memorial of the Eastern Chiefs and Maryland State Firemen. There were twenty-four lighted crosses; twenty-three for the counties of Maryland, and one for the Eastern Association. As the names were called the crosses were turned off.

Cruise Down the Chesapeake

In the afternoon, most of the Chiefs boarded the boat "Dixie" for a cruise down the Chesapeake and inspection of the Naval Academy. The boat arrived off Annapolis so late, however, that a landing was deemed inadvisable. There was plenty of fun making on the boat and the trip was not wasted. As the boat left Baltimore, the three city fireboats came out from their piers and put on a display. A fourth boat is out of service at present and was observed at the repair shop dock as the "Dixie" went down the harbor. There was a banquet at the Lord Baltimore Hotel on Thursday night.

Seashore Fires in Frame Buildings

President Davis presided over the Friday session. Since Chief David Stewart, Ventnor, N. J., could not be present, his paper was read by Secretary Charles Clark. Chief Stewart's paper was on "Fighting Fires in Frame Buildings along the Seashore." The paper described the quadruple truck which he uses on such fires with very excellent results. This truck is always backed up with heavier equipment, however.

Anything Can Happen at a Fire

Deputy Chief John J. T. Waldron, New York City, presented his paper on "Ordinary Happenings at Ordinary Fires." Chief Waldron said that he had been requested to prepare a paper on extraordinary happenings at extraordinary fires. He said, however, "You can expect anything to be an ordinary happening at any fire."

To prove this assertion he cited several examples from his experience. A shack caught fire in a suburban section and the firemen responded. As they approached the shack an explosion occurred and one fireman lost a leg as a result. It turned out that a watchman had stored twenty-five pounds of dynamite in the shack.

Firemen Showered with Burning Liquid

In another case a steel cabinet containing chemicals caught fire in the Alexander Hamilton High School, Brooklyn, N. Y. Firemen pulled the cabinet into a corridor, opened the doors and applied the extinguishing agent.

The chemicals promptly exploded and showered the firemen with burning liquid. In this case the firemen were overzealous and were grouped too close to the cabinet. As a result several were badly burned. Fireboat crews may also expect anything to be an ordinary happening at any fire.

One fireboat crew boarded a ship and the firemen spent several minutes in chasing streamers of fire about the deck. Finally the boat officer wondered why no land companies were present and went to investigate. He found dock workers guarding the street entrance of the pier and refusing to allow anyone to enter. They were warning everyone to stand back as the boat was loaded with nitrate and might explode any second! And all during that time the fireboat crew was putting the fire out, entirely unaware of the nature of the cargo under their feet.

Chief Waldron told of another case where he was warned not to open a certain door. On inquiry he found that the door was equipped with a device fixed to fire a bullet at the person opening it. This primitive burglar alarm has since been outlawed in New York City. Chief Waldron's paper was received with much interest. He not only had an interesting subject but told it in a very entertaining manner.

President Tierney on I.A.F.C. Program

An unexpected guest at the meeting was Chief Daniel Tierney, President of the International Association of Fire Chiefs. Chief Tierney paused in the city overnight after a trip to Washington. He told the Chiefs of the educational program which is due to start in the near future. This program will benefit both paid and volunteer firemen. He also told of efforts to have fire apparatus included in PWA grants. Chief Tierney said that fire apparatus manufacturers had originally tried to have this put through, but had been turned down. He said that a survey indicates that American Chiefs would like to buy 6,000 new pieces of fire apparatus. This apparatus would have a value of $10,000,000.

Mrs. Mary Baker, Ladies Auxiliary to the Maryland State Firemen's Association, thanked the Chiefs for their support of the Hospital Ball. Proceeds of this affair will aid injured volunteers in Maryland.

In reference to Chief Tierney's talk on education, Chief Anderson, Bethlehem, Pa., offered a suggestion. He said that those who cannot attend the fire schools might follow the study courses offered in FIRE ENGINEERING.

Fighting Major Fires

Chief Howard Travers, Baltimore, next read a paper on "Operations of Fire Departments at Major Fires," in which he outlined operations at a warehouse fire and explained the method of extinguishing it. Chief Waldron offered some comment on this paper. He cautioned firemen against following orders out to the letter. Chief Waldron also cautioned the Chiefs against using "first alarm methods at five-alarm fires."

Dr. Price on Dust Explosions

A second unexpected guest was Dr. David Price of the Department of Agriculture. Dr. Price presented a paper on Dust Explosion Prevention. He said that there had been no deaths in starch product plants in this country since 1930. Dr. Price attributed this to careful education of the workmen on the hazards of dust There was some discussion on hazardous processes in the manual training shops of schools. Dr. Price said that all such processes should be isolated from the school.

Chief Nick Phelan told of an experience where he was inspecting a hospital. He pulled a local box and was amazed to find that the hospital fire brigade paid no attention to the alarm. On investigation he found that the hospital possessed a certificate from a Department of Labor inspector, certifying the hospital to be okay. On the strength of this certificate the hospital authorities said they did not think it necessary to bother about the fire alarms any more.

Organization of Arson Investigation

Chief Edward Warr, Baltimore Salvage Corps, presented a paper on "Organization and Cooperation of Arson Investigation by Fire Departments." He told of the necessity of never relaxing efforts to stamp out this crime.

President Ross Davis introduced Leo Leiberman, Chemist, New York Fire Department. President Davis promised the Chiefs that he would have a paper from Mr. Leiberman for the next convention.

The Chiefs were spectators to a parade put on by Maryland volunteers in the afternoon. Engines, firemen, and bands from all parts of the state wound through the center of the city in a parade that lasted for two hours. Later in the day there was a crab and beer feast at the Fifth Regiment Armory. At night there was a bout at Carlins Park for the featherweight championship of the world. Those Chiefs who were still up at 1:38 a.m., saw a five-alarm fire in an uptown auto showroom.

Address by President Davis

The final session of the convention opened Saturday morning with President Davis presiding as usual. He told of a surprise party given to celebrate Chief Spencer's seventy-second birthday. He then gave a brief address in which he told of the many benefits of the conventions and the fire schools.

Fire Education of Public

The first subject for round table discussion was given by Chief Anderson, Bethlehem, Pa. Chief Anderson said that the fire schools are a wonderful benefit to the firemen, but that nothing is being done to educate the public on a large scale. Chief Oliver Lampert, Haddon Heights, N. J., suggested fire publicity in newspapers.

Chief Phelan described the educational work conducted by his department. An annual four-week fire school is conducted for the benefit of workers. Boy Scouts are instructed and instructors are furnished to women's clubs.

President Davis then remarked that newspaper publicity is excellent. He said that the papers are reluctant to give much publicity, unless the news is of a sensational nature. Ordinary fire news is technical and has but little chance of being printed.

Hazard of the Veneer Front

Chief William Lutz, Wilmington, Del., then asked the Chiefs for their experience with the veneer front building. This is the type where an ornamental front is applied, covering all openings, except on the ground floor. Chief Lutz told of a building in Wilmington where this condition exists. The building under discussion is in a row and runs back to another street. Both ends of this building are of the veneer type.

Snapped Here and There at the Eastern Fire Chiefs Convention, Baltimore

(L. to R.)—Chief Andrew Callahan, Harrison, N. J.; Chief Roscoe Foster, Norfolk Navy Yard, Portsmouth, Va.; Ex-Chief Geo. Mitchell, East Orange, N. J.; H. G. Cavanaugh and E. A. Kavanagh, A.D.T. Co.; Geo. J. Richardson, Secty-Treas., Intl. Ass'n of Fire Fighters, talking it over with Chief Daniel Tierney of Arlington, Mass., President, I.A.F.C.

Chief Lutz declared that a fire in this building could gain tremendous headway and would probably not be noticed until it burst through the roof.

Chief Travers said that the Baltimore Fire Department tries to discourage use of the veneer front for buildings.

Another Form of Veneer Front

Chief Waldron also commented on this type of construction. He said that the veneer front presents a special hazard. Chief Waldron also told of a type similar to the veneer front. This is the building where only the ground floor is used and the upper floors are absolutely cut off. The only way to enter from the inside is usually a trap in the first floor ceiling. When a fire occurs on the upper floors, Chief Waldron's order is for the firemen to raise a ladder to the second floor, smash the window, or raise it, and enter at that point.

Firemen Injured at Veneer Front Fire

Chief Howard Travers also told of an experience with the type of building which has the upper floors isolated. This happened about two years ago. A false ceiling had been erected and the stairs to the second floor boarded up. A fire started on the first floor, filling the void above the false ceiling with gases. Firemen responded and entered the front door. Other firemen entered the rear door without orders and the gases exploded. Every fireman in the front part of the store was blown out through the plate glass show window and a total of fourteen firemen were injured.

Another hazard of this type of construction is that it makes effective ventilation impossible. Truckmen, not knowing the building is closed above the first floor, will start ventilating from the roof down. Of course there is no way for the heat to rise above the first floor and only first floor ventilation is taking place.

Oppose Trackless Trolleys

The association went on record as opposing the wires of trackless trolleys. This recommendation was offered by Chief James G. Hogan and Capt. George Wick, Bayonne, N. J. It was declared that the wires not only make ladder raising difficult, but that the double wires may be fatal.

Capt. James Mears, Haddon Heights, N. J., suggested that all present officers of the association be reelected and this was carried by a unanimous vote. President Davis thanked the members for their support, as well as for the support given all other officers of the association.

It was left to the Executive Committee to announce the next place of meeting. After adjournment, a sound picture was shown. "Title Approved by Underwriters," and it showed the operation of the Underwriter's Laboratory. At the conclusion, the Chiefs reassembled on the city hall plaza for a second showing of the high pressure system. Two turret wagons were demonstrated. The department set a Jumbo nozzle. This gun attaches directly to a high pressure connection. It will deliver 7,000 g.p.m. These guns are intended to form a water curtain in the event of a fire sweeping a city block in the high pressure area. In the demonstration, the gun operated at reduced pressure and threw a 4½-inch stream, the length of a block.

After the demonstration the Chiefs went to an outlying club, where President Davis showed that he can not only fight fire, but can sing the Sneitzelbank. Clam chowder, beer, crab cakes, and clams were served.

Exhibits at Convention

There were seventeen exhibitors at the convention. Exhibits were arranged on the second floor of the Lord Baltimore Hotel.

The most eye-catching display was an aerial ladder truck built by American-LaFrance for the Water Witch Fire Company, Annapolis, Md. This truck has a 100-foot all metal ladder, which is raised by hydraulic control. It also has a 20-kw. generator and six flood lights. The entire truck cost $21,000. American-LaFrance also had a cab pumper on display.

Wm. Mueller, of the Atlas Fire Equipment Co., New York City, had an Atlas life net on display.

The American Fire Hose Company displayed several rolls of Lin-Lined Hose and light weight couplings. Phil Hofer conducted the display.

The American-LaFrance and Foamite Industries, Inc., had a booth containing a foam generator, extinguishers, and a light plant.

Mr. Arrington of the Baltimore ADT office was in charge of the ADT booth. There were both fire and burglar alarm devices on display. This included the tubular fire alarm and the invisible ray system for detecting burglars.

Mack Trucks, Inc., maintained a booth containing literature on their apparatus.

C. H. Dever and G. L. Seth conducted the display of the Mine Safety Appliance Co. First-aid equipment, rescue equipment, and other devices were shown.

Walter Kidde & Co. of Bloomfield, N. J., was represented by Harry Fried. He had a display of extinguishers, both carbon dioxide and the loaded stream type.

F. L. Anderson, Baltimore fire equipment dealer, had a display of the products of various firms. Nozzles, couplings, extinguishers, sirens, and various connections were shown. Mr. Anderson was in charge of the booth.

Carl Getz had an Indian pump on display for D. B. Smith & Co. of Utica, N. Y.

The McCardel & Walsh Co. of Baltimore had a booth exhibiting brass fittings.

Ahrens-Fox Fire Engine Company, Cincinnati, had a booth containing literature on their newest pumpers purchased by New York City.

The Robinson Sponge Co. of Brooklyn, N. Y., exhibited their product.

Copies of FIRE ENGINEERING were distributed by Fred Shepperd, Editorial Director; I. H. Case, Vice-President and General Manager, and Otis Smith, local correspondent.

The Homelite Corp. of Port Chester, N. Y., displayed their portable generators and pumps. Nelson Thompson was in charge of this booth.

E. E. Hanson conducted the display of the Elkhart Brass Mfg. Co. There were various types of nozzles and extinguishers in the exhibit.

Fire resistant canvas for awnings, etc., was displayed by the Wm. E. Hooper & Sons Co., of Baltimore.

H. H. Mead arranged a display of several types of nozzles and connections for the Akron Brass Mfg. Co.

Maryland Firemen Elect Officers

At the 46th annual convention of the Maryland State Firemen's Association, held in conjunction with the convention of the Eastern Association at Baltimore, the following officers were elected:

President—Karl A. Young, Mount Ranier.
First Vice-President—Walter D. Merryman, Hereford.
Second Vice-President—John F. McNulty, Linthicum Heights.
Secretary—George R. Lindsay, Hagerstown.
Treasurer—Frank Truitt, Ocean City.
Trustee—Harry L. Smith, Cumberland.
Chaplain—The Rev. James W. Minter, Hereford.

Next year's convention is to be held at Ocean City, Md.

On the Boat Trip at the Baltimore Convention, E.A.F.C.

(L to R) Left Group—Chief and Mrs. Geo. P. Lasher, Edgewater, N. J.; Mr. and Mrs. Clarence E. Meek, Ahrens-Fox Fire Engine Co., New York; Capt. Wm. H. Odell, Greenville, N. Y. (standing right). Center—Chief Wm. J. Lutz, Wilmington, Del., hard-working Exhibit Chairman, tries his luck for the jackpot. Right—Standing, E. A. Mellin and Chief L. E. Wagner, York, Pa. Seated, Mrs. Wagner, and Chief and Mrs. E. C. Mellin of Jermyn, Pa.

McKinney, Chief of Rome, Ga.

W. T. McKinney, whose appointment as Chief of Rome, Ga., was announced in the June issue of FIRE ENGINEERING, to fill the vacancy caused by the death

Chief W. T. McKinney

of Chief Taylor, entered the department in 1927.

He was appointed Engineer in 1930; Assistant Chief on January 5, 1937, and Chief on May 11, 1938.

Chief Horace L. Taylor died of a blood infection.

Bus Crashes Into Apparatus

Six firemen and seven bus passengers were injured when a bus crashed into the side of the apparatus of Engine No. 9, Paterson, N. J., as the apparatus was leaving the station. It was claimed that the bus did not slow up as it approached the station.

Firemen riding on the rear of the apparatus were thrown to the street. Capt. Strathearn managed to free himself from the wreck and shut off the ignition. Twenty-two passengers were in the bus.

The front of the bus was badly damaged as was the left side of the apparatus.

Proposes Control of Oil

The annual meeting of the Executive Committee of the Maryland State Firemen's Association was held in Baltimore March 20. Legislation regulating the storage and transportation of petroleum products will be sought by the association, as well as a measure to prohibit building operations which violate underwriters' regulations. The latter is aimed at enterprises using inflammable liquids, such as cleaning establishments. Chief Jesse A. Fisher, Jr., Annapolis, heads the committee which will draft the law.

Speakers at a dinner session included: Mayor Howard Jackson; Chief Howard Travers, Baltimore; B. H. Shipley, President of the association; Jesse Fisher, Chief of Annapolis; W. D. Merryman, President of Baltimore County volunteers; T. W. Vennemann, Riverdale, Md., Chairman of Fire College; Prof. R. B. Criswell, University of Maryland Fire College; George Pollock, University of Maryland; Rev. James Minter, State Chaplain; Marc Bryant, Denton, Md.; Millard Tawes, past-President of Maryland State Firemen's Association.

F. Albert Clautice, Pikesville, told of tentative plans which have been arranged for the joint convention at Baltimore this June. Mr. Clautice, a well known fire fan, is General Chairman of the Convention Committee. The Maryland State Association and the Eastern Fire Chiefs Association will convene here during the week of June 15.

OTIS SMITH.

Limit of Police Power

Cities have no police power, other than that expressly granted, which would permit their Fire Departments to intrude upon lands in the surrounding territory over protest of the owner, Attorney General A. A. F. Seawell, of North Carolina, ruled recently.

He added that "because of the important and beneficient character of the work which fire companies are willing to render in emergencies, there has never been any attempt to restrain them from answering calls from outside of municipal jurisdiction."

The ruling was made at the request of the State Firemen's Association, the State and Southeastern Fire Chiefs' Associations.

Answering six questions submitted to him, Mr. Seawell ruled:

1. Fire departments have the same right of way and enjoy the same exemption from speed law when responding to a call without the city limits, as they have when responding to a call within the city limits.
2. It is doubtful that firemen answering calls outside city limits have the right to enter or cross private property without permission of the owner.
3. Firemen cannot legally be ordered to attend fires beyond the corporate jurisdiction. In such cases they should be asked to volunteer. However, "Since members may be removed at will," he explained, "there is nothing to prevent the removal of a fireman who refuses to obey an order to answer an out-of-town call."
4. Neither the city nor an individual fireman can be held liable for damage resulting to property within the town because of the absence of Fire Department personnel and equipment while on an out-of-town call.
5. Municipalities are not liable for torts committed by firemen while attending fires outside city limits and the additional two-mile area over which a municipality may establish fire protection.
6. Fire Department drivers are liable for reckless disregard of the safety of others in speeding, and for injuries resulting from unreasonable emergencies of their right of way or failure to observe due care at a fire.
7. Firemen injured while fighting fire or rendering assistance beyond the taking district limits or the families of firemen killed under such circumstances, are entitled to relief.
8. This relief should be furnished by the district which employed the firemen.

D. G. SPENCER

Capt. W. G. Russell Dead

Captain William G. Russell, 51, chief aide in the Fire Marshal's Office of the Waterbury, Conn., Fire Department, and President of the New Haven County Fire Chiefs' Emergency Plan, died on July 1 at his home in that city. Captain Russell had been ill for several weeks. He was appointed a member of the Waterbury department in 1907.

He was a member of the New England Fire Chiefs' Association and also attended several conventions of the International Fire Chiefs' Association. He was influential in organizing both the New Haven and Litchfield County Fire Chiefs' organizations. On May 17 he was elected President of the New Haven County Fire Chiefs' Emergency Plan and was taken ill shortly after being honored by that office.

Fire officials from several cities in the state attended the funeral, which was held from his late home in Waterbury on July 4. Members of the Waterbury Fire Department acted as pall bearers. Delegations from the New Haven and Litchfield County Chiefs' organizations attended.

THOMAS F. MAGNER

Guests Escape from Hempstead, L. I., Hotel

Aroused by a milkman, who had heard the crash of glass, thirty guests of a Hempstead, L. I., hotel escaped from the burning building clad in their nightclothes. The owner refused to leave until the firemen had rescued an Irish setter and fourteen pups. The hotel was reconstructed in 1920 from a hospital building erected in 1912. Volunteer fire companies responded from Hempstead, Freeport and Uniondale. Damage to the three-story brick structure was estimated at $75,000.

Montreal Looks Into Escape Hazards

Montreal, Que., officials are determined to make a study of the wooden fire escape hazard which is believed to exist in a number of places, including city institutions.

A resolution was presented for amending the city charter, so that owners of boarding schools, asylums, and similar buildings, where a number of persons dwell, would be required to erect iron fire escapes, and to install the boilers in a building separate from the main building.

Wooden Fire Escape, Part of an Institution in the Down Town Section of Montreal

Firemen Meet at Southern Pines

The Southern Pines and Aberdeen Firemen were hosts to the Sandhill Firemen Association June 15, at Southern Pines, N. C. There are 29 associations in the district and every association was represented.

Addresses were delivered by Mayor Stutz, Southern Pines, and Mayor Shamburger, Aberdeen. Talks on various phases of firemen's work were made by J. B. Flora, President of the State Firemen's Association; J. T. Talbot, Aberdeen; Sherwood Brockwell, State Fire Marshal; J. L. Miller, State Secretary, Firemen's Association, and L. S. Rowell, President of the Sandhills Association.

J. C. Worley, Chief of the Hamlet Association, was elected President of the District for the next year. The next convention will be held in Hamlet in June, 1939.

A resolution was adopted against oil trucks parking in towns and otherwise making greater the hazards of life and fire.

D. G. Spencer.

Two Injured in Blast

To the introduction of many accidents, "I didn't know it was loaded," may be added the statement, "I thought the tank was empty."

Because it was generally believed that a gasoline tank was empty, fifty or more windows were broken and two men were injured in Oswego, N. Y.

As part of a street widening program, WPA workers had uncovered a 500-gallon capacity gasoline tank, such as is used by service tanks, and had rolled the supposedly empty tank against a building. As far as is known, no gasoline had been in the tank for years.

Not far from the tank, several men were standing talking and smoking.

A sudden blast shot up a sheet of flame as high as the third floor, threw two men on a pile of excavated dirt, and started a shower of broken window glass. The Fire Department responded, and while the front of the building was badly scorched, no fire developed. The men received some bad bruises.

Chief Monte Lass said that it was lucky that the tank was on the outside, for had it been indoors, the damage would have been heavy. It is believed that fumes from the tank had reached a lighted cigarette of a bystander, and had flashed back.

(Editor's Note: See Article on "The Community Oil Fire Hazard," in this issue.)

Monthly Hero Award for Chicago

A monthly hero award for the most outstanding act of heroism performed by a fireman or a group of fire fighters of the Chicago Fire Department, has been announced by Commissioner Michael J. Corrigan, to start with the month of May.

The awards will be given by Albert J. Pixley, and will be known as the Pixley Hero Award. It will consist of a silver engraved trophy and $25 for the winner.

Mr. Pixley said:

"The purpose of giving this monthly hero award is to bring to Chicagoans a fuller realization of the splendid work accomplished by the firemen of the city."

First of Pixley Awards Made by Chicago Fire Department

The first of the Pixley awards for heroism of members of the Chicago Fire Department, was made to Fireman Arthur Van Leirsburg, who twice risked his life to rescue a comrade trapped during a paper box plant fire. The award, consisting of a silver trophy and a $25 check, is given each month for the most outstanding act of heroism, and was established by Albert J. Pixley. He is shown shaking the hand of Van Leirsburg, as Fire Commissioner Michael J. Corrigan looks on.

New England Fire Chiefs Discuss Standardization of Pumpers

Sixteenth Annual Convention Is Held at Burlington, Vt., With Large Attendance—Chief Burns, Bridgeport, Elected President

A BAND concert, parade, and impressive memorial service in the Strong Theatre featured the opening of the 16th annual convention of the New England Association of Fire Chiefs in Burlington, Vt., on June 21.

Registration opened the night before at convention headquarters in the Hotel Vermont. The committee, composed of Chief Oliver T. Sanborn, Portland, Me.; Chief William T. Happny, Concord, N. H., and Chief Alfred H. Koltonski, Rutland, Vt., issued badges and programs and assigned hotel accommodations. There was an unusually large "night before" gathering and many reunions of old friends took place. Rooms at the Vermont, the Van Ness, and the Sherwood Hotels were soon at a premium as the Chiefs and their guests poured into Burlington from all points in the New England States.

The time and place for next year's convention was left to the officers and Board of Directors, invitations having been received from the Mayors of Boston, Providence, and Bridgeport.

Election of Officers

The election of officers on the last day of the convention resulted as follows:

President—Chief Thomas F. Burns. Bridgeport, Conn.
First Vice-President—Chief Samuel J. Pope, Boston, Mass.
Second Vice-President—Chief Thomas H. Cotter, Providence, R. I.
Secretary-Treasurer—Chief John W. O'Hearn, Watertown, Mass.
Sergeant-at-Arms—Chief William T. Happny, Concord, N. H.

State Vice-Presidents

Maine—Chief Oliver T. Sanborn, Portland.
New Hampshire—Chief Charles H. French, Manchester.
Vermont—Chief Alfred H. Koltonski, Rutland.
Massachusetts—Chief William C. Mahoney, Peabody.
Rhode Island—Chief Augustin J. Cote, Woonsocket.
Connecticut—Chief James Downey, Wallingford.

Chief O'Hearn was named as Representative to the International Association of Fire Chiefs and Harry Belknap, Boston, Mass., was re-elected Press Representative.

Reports showed a total membership of 833, including 469 active and 364 associate. The registration committee reported a total attendance at the convention of 501.

Chiefs March to Opening Session

Tuesday morning the Chiefs marched behind the band from convention headquarters, by way of St. Paul Street, Bank Street, and Church Street, to the theatre where the opening session was held.

The procession of Chiefs was headed by Mayor Louis F. Dow, Burlington; Chief Joseph W. Randlette, Richmond, Me., President of the association; Chief Carl D. Stockwell, Burlington Fire Department; Chief Thomas F. Burns, Bridgeport, Conn., First Vice-President; Fire Commissioner William Arthur Reilly, Boston; Chief Samuel J. Pope, Boston, and Chief John W. O'Hearn, Watertown, Mass., Secretary-Treasurer.

The convention opened with invocation by the Rt. Rev. Monsignor Patrick C. Brennan, of the Cathedral of the Immaculate Conception.

President Randlette called the following Past-Presidents of the association to take seats upon the stage:

Chiefs Charles H. French, Manchester, N. H.; Oliver T. Sanborn, Portland, Me.; Selden R. Allen, Brookline, Mass.; Carl D. Stockwell, Burlington, Vt.; Patrick J. Hurley, Holyoke, Mass.; Lawrence E. Reif, New Haven, Conn.; John S. Pachl, Annex Fire Department, New Haven, Conn.; Joseph S. Lawton, Newport, R. I.; Daniel B. Tierney, Arlington, Mass., and Alfred H. Koltonski, Rutland, Vt.

In delivering the address of welcome Mayor Louis F. Dow took occasion to

Some Popular Figures at the New England Fire Chiefs Convention

(L. to R.)—Chief and Mrs. Carl Stockwell, Burlington, genial convention hosts; Chief Thos. Burns, Bridgeport, Conn., newly-elected President, N.E.A.F.C.; Chief John W. O'Hearn, Watertown, Mass., efficient Secty-Treas., N.E.A.F.C., with his charming niece and helpmate, Miss Rose McKinney.

At the New England Fire Chiefs Convention

(L. to R.) left group—Ex-Chief Peter Walsh, Boston; Chief Wm. C. Mahoney, Peabody, Mass.; Dr. David J. Price, U. S. Dept. of Agriculture, Washington. Center—Delegation of the Boston Sparks Ass'n., Rear—K. B. Fitzgerald, Wm. H. Brooks, John H. Madden, Wm. A. Grouse, Edw. T. Ryan; Front—V. Bolger, W. T. Kennealey. Right—Commr. Hugh D. McLean, Chief Patrick Hurley and Commr. Geo. D. Stalker, Holyoke, Mass.

pay tribute to Chief Stockwell, of the Burlington Fire Department, remarking that "a finer gentleman the Lord never put upon this earth and to find a better Fire Chief the city would have to search far and wide."

The response to the address of welcome was delivered by Fire Commissioner William Arthur Reilly, of Boston, who said in part:

"It is a particular pleasure to come to Vermont for a convention, as this state typifies a real New England district, with all the qualities that have made America great. The people of Vermont represent real Yankee Americanism at its best. This meeting here in your beautiful state will be a profitable one for all those fortunate enough to be in attendance, as by the interchange of experiences and ideas and in seeing the latest development in fire apparatus, much knowledge will be gained. We extend sincere thanks to the Mayor, the Chief, and the people of Burlington for the hearty welcome they have extended to us today."

Secretary O'Hearn announced that the other meetings would take place in the municipal auditorium and Chief Stockwell told of the entertainment program that had been arranged for the ladies attending the convention.

The Boys Made Themselves Comfortable at the Burlington Convention, N.E.A.F.C.

Top—Scene of the well attended meeting room. Center (L to R)—Asst. Chief W. F. McMillan, Hopkinton, Mass.; Chief Gordon Ross, Hopkinton; Chief E. L. Pilling, Stockbridge, Mass., and Asst. Chief A. G. Breed, Stockbridge, Mass. Bottom (L to R)—Chief Alfred Fay, So. Manchester, Conn.; Chief C. A. Reynolds, Willimantic, Conn., and Chief Geo. B. Milne, Rockville, Conn.

Memorial For Deceased Members

The memorial service then started with the rendition of "Lead, Kindly Light" by the Henry Gallup Quartette.

Secretary O'Hearn read the roll call of members of the association who had died since the last meeting.

The list was as follows:

Chief Arthur W. Dugan, Vergennes, Vt.; Chief Isaac M. Hubbard, Greenwich, Conn.; Frederick W. Haynes, Peabody, Mass.; Chief Manuel S. Miguel, Manchester, Mass.; Ex-Chief E. W. S. Pickett, Fairfield, Conn.; Ex-Chief C. H. Knowles, South Hamilton, Mass.; District Chief James H. Gallagher, Fall River, Mass.; John J. Scully, president of the American Fire Equipment Company, Boston; Chief Louis Ware, Hanover, N. H., and Chief Frank M. White, Guilford, Conn.

Taps were sounded by a bugler from the army post at Fort Ethan Allen.

Former Burlington Chief Passes On

During the session news was received of the sudden death in Williston of former Chief Charles A. Niles, Burlington Fire Department, who passed away during the night at the age of 63 years. He was tax collector and constable in Williston, Vt., and had recently announced his candidacy for the Republican nomination for sheriff of Chittenden County. He is survived by his wife and four children.

A solo "There Is No Death" was rendered by Lawrence Luzon, who was accompanied on the piano by Mrs. Luzon.

The memorial address was then given by the Rev. Michael F. Collins, of the Star of the Sea Church, Marblehead, Mass., who was recently appointed chaplain of the association.

Exhibits Visited

The session closed with benediction by the Rt. Rev. Mgr. Brennan.

Most of the chiefs then visited the Municipal Auditorium to view the exhibit of fire apparatus, hose, nozzles, inhalators, smoke masks, life nets, badges, and various fire department tools and appliances.

Much interest was manifested in the new stream lined enclosed types of fire engines, which were exhibited for the first time at this convention.

Committees Appointed

The Tuesday afternoon session opened at 2 o'clock in the auditorium, with Chief Joseph W. Randlette presiding. Vice-Presidents Burns and Pope and Secretary-Treasurer O'Hearn were on the platform with the speakers and there was a good attendance in spite of the extremely hot weather which prevailed.

President Randlette announced the appointment of two committees as follows:

Committee on Courtesies, Chief John C. Heney, Barre, Vt.; Chief Allen Payson, Camden, Me., and Chief Fred H. Pye, Stoughton, Mass. Auditing Committee, Chief Oliver T. Sanborn, Portland, Me.; Chief William C. Mahoney, Peabody, Mass., and Chief Augustin J. Cote, Woonsocket, R. I.

President Tierney Addresses Convention

Chief Daniel B. Tierney, Arlington, Mass., President of the International

Members and Guests of the New England Association of Fire Chiefs Assembled in Front [illegible] Hall, Du[illegible]

At the Burlington Convention, New England Association of Fire Chiefs

(L to R) Left group—Eighty-four-year-old Chief Frank Tracey, Woburn, Mass., with son, Hubert W. Tracey of American Fire Equipment Co. Center—Part of the formidable Connecticut delegation. Right—Chief Edw. Dahill, New Bedford, Mass.; Chief Chas. H. French, Manchester, N. H.

Association of Fire Chiefs, was then introduced and read a paper on "The Progress of the International Association." He told the history of the formation of the organization 65 years ago and of the high aims and ideals of its founders. He traced its growth through the years and said the development and extension of the training schools for firemen had been effected by the Educational Committee, which had recently enlisted the aid of the Federal Bureau of Vocational Training.

The Chief told of the purposes of the association and of the efforts being made to improve the standing of the fire service. He advocated the extension of civil service and higher salaries for firemen. He paid a tribute to the work accomplished by the New England Association and to the untiring efforts of Secretary O'Hearn.

Standardization of Motor Pumpers

The next speaker was Chief Samuel J. Pope, of Boston, Mass., on "Standardization of Motor Pumps." He described the meeting held in Buffalo, N. Y., of a committee appointed by the National Fire Protection Association. This committee was headed by Chief Joseph N. Sullivan, of Utica, N. Y., and included Chief Pope, of Boston; Chief J. Ray Roe, of Abilene, Texas; Chief Roy Mottesheared, of Dearborn, Mich.; Engineers Booth and Goldsmith, of the National Board of Fire Underwriters, and Mr. Parker, of the Missouri Inspection Bureau. The meeting was held to draw up specifications for fire apparatus. It was advocated that motor pumping engines be required to have a capacity of 750 gallons of water per minute at 150 pounds pressure instead of at 120 pounds pressure. A plan for uniform testing of fire ladders was also discussed. It was found that most failures of motor fire apparatus resulted from ignition troubles. Whereas apparatus formerly carried two or three separate storage batteries, at present only one battery is provided for various uses.

Those who took part in discussion of the subject were Chieff Selden R. Allen, Brookline, Mass.; Chief Henry R. Taft, Norwich, Conn.; Percy C. Charnock, of the New England Insurance Exchange; Chief Herbert C. Root, Springfield, Mass.; Chief Thomas F. Slaman, Wellesley, Mass., and Charles Fox, of the Ahrens-Fox Fire Engine Company.

Functions of a Modern Fire Department

Chief Allen, of Brookline, was the third speaker on the program. He described the functions of a modern Fire Department, which, he declared, is for the alleviation of human suffering and not merely an instrument for the extinguishment of fires. He stressed the importance of fire prevention; a good set of building laws impartially enforced, and a systematic inspection for the removal of rubbish. He mentioned the value of zoning laws and told of the present methods of safeguarding firemen by scientific ventilation of buildings at fires and by the use of gas masks. He told of the value of lighting plants at night fires and of the importance of inhalators and first aid kits. The Chief said that firemen's training schools are of great benefit. He said that adequate equipment and a trained personnel are necessary in the fire service.

(To be continued)

Asst. Chief Butler, Atlanta, Dead

Assistant Chief William Butler, Atlanta, Ga., Fire Department, died in his seventy-second year, after forty-eight years of service in the department. A few years ago he turned down a promotion to Chief because he wanted to "stay downstairs with the boys."

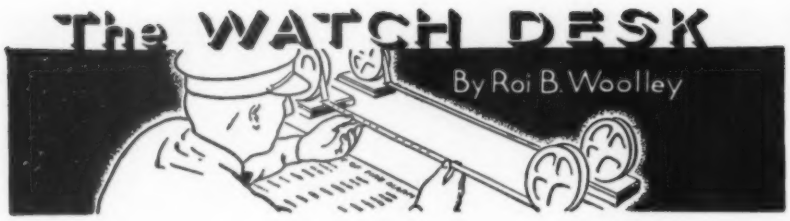
He joined the department in November, 1889. He became Second Assistant Chief in 1910 and First Assistant Chief in 1930.

Following the death of Chief Terrell in 1933, he was elected Chief. Four days later he resigned as Chief and resumed his old post of Assistant Chief.

Chief Butler is survived by a son, a daughter and three grandchildren.

In Front of City Hall, During the Sixteenth Annual Convention at Burlington, Vt., June 21 to 23, 1938

Photo by L. L. McAllister, Burlington, Vt.



Our inquiring reporter overhauls the firemanic news of the day.

Gossips Burn Up Plant

Two gossiping women, out Los Angeles (Cal.) way, who wouldn't get off the two-party telephone line to let the manager of the Paramount Ice Company call the Fire Department were indirectly responsible for the plant's destruction. When the manager tried to call the department, and cut in on their chatter they thought his excitement was just hooey to get 'em off the line. By the time he ran blocks to get to another phone the ice plant was past saving.

Another "Cat-astrophy"

Four pieces of apparatus, three radio cars, a chief and a police rescue squad car and a gas emergency truck raced to a fire alarm received from a grocery at 507 W. 146th Street, New York City. Firemen found smoldering wires under an electric refrigerator. They also found the body of a big tomcat, cooked plenty, caught in the wires.

Much Adoo About Nothing

This yarn is relayed to us via Lieut. T. F. Magner, Bridgeport F. D., who got it from Lieut. R. L. Barton, Hartford (Conn.), F. D.

Seems that in Hartford one day an alarm was received from Box 144 located one block from quarters of Second Deputy Chief and Eng. 2 and Truck 3. On arrival at box firemen were informed that fire was "north of the brickyard on No. Main St."—a distance of two miles. It developed that a garbage man discovered a fire in a small shack near the R.R. tracks. He went on to his next stop, a restaurant and told the counterman, who pulled a nearby box. The officer on the beat saw him and asked where the fire was. When apparatus pulled up, the officer informed the Captain, who relayed it to the Chief and the procession started for the fire—one Deputy, Engs. 2, 4, and 7 and the Ass't. Chief. The garbage man had passed eight boxes and the quarters of Eng. 7. As a sequel, three minutes after receipt of Box 144 alarm, another alarm was received from Box 83 across the street from the fire. This brought three more engine companies and a truck and the Chief of Department. Net result was that all fire stations in north, northwest and downtown Hartford were out of service. Now we know why some men drive garbage trucks.

That's a Lot of . . .?

To the Nyack (N. Y.) F. D. goes credit of having extinguished the only fire we wot of caused by spontaneous ignition of elephant manure. Our deponent sayeth that up in the colony known as the Clarkson Country Club near Nyack there's a herd of trained elephants. Recently the offal of the herd, banked near the barns, smoldered (as farmers know manure is like to do) and finally ignited, involving nearby waste, straw, etc. We understand the Nyack braves conquered the blaze with the aid of gas masks!

Empty—But It Kept Its Kick!

Here's a new one. We allus knew the danger that remained in supposedly "empty" gasoline tanks, but we never knew that "empty" whiskey barrels kept *their kick*, until our Michigan newshawk sent in the story of Edward Felker, 30-year-old mill worker, who pulled the bung to a whiskey keg that had been lying in the sun for several hours, so that he could "inspect" it. The keg exploded, hurling Felker ten feet, breaking his left ankle, severely burning him about face, arms and chest.

The Balloons Go UP!

When a stand selling gas filled balloons at Versailles (France) went up with a bang—result of an inquisitive male with a cigar-butt, no doubt—over 100 children were burned or injured in the panic that followed. A thousand youngsters had assembled on the main streets where booths were set up as part of a celebration in honor of Lazare Hoche, one of Napoleon's generals and the balloon stand was about the middle of the mob. We've printed other accounts of similar explosions. Where'll the next one be?

Came the Dawn

Out in Bountiful (Utah)—what's in a name!—Mrs. Orson Bangerter opened one eye, peered out and said to her husband, "It's daylight. Get up." And pop Bankerter arose. "Day Hell!" yelped he, "the house's on fire." And it was—no foolin'. Damage to rear of house was estimated at $1,200.

Shows Faith—Dies

Mrs. Elizabeth Miller, according to police, drenched her clothing with gasoline and set it afire "to prove her faith" and died soon after. Before dying she told hospital surgeons "I wanted to suffer a lot of physical pain in gratitude to the Lord for the blessing he gave me. I wanted to prove my faith." Some folks take a queer way of doing it!

Another Ripley?

Out near Portland (Ore.) Mrs. A. L. Arndt burned her hand on a cook stove one day. A week later, the bandage on her hand caught fire while she was preparing coffee. When she tore it off, it fell to the floor and ignited papers. The whole house burned down before the firemen arrived!

Hot Off the Ticker

The *New Yorker* says that most of the prizefight fans in Havana think that Joe Louis used to be a fireman. The error originated in Havana's leading paper, *Diario de la Marina*, whose sports editor translated "bomber" as *bombero*, which means "fireman." . . . Sabbath candles melted by heat waves, caused seven fires in Bronx (N. Y.) apartments on same night. . . . Firemen in Convention in Baltimore witnessed five-alarm fire. One "bibulous brave" said "Gosh, those fellers sure did put on a show for us!" . . . In Fitchburg (Mass.) one fireman lost life, 85 nuns and children escaped, when fire razed the Holy Family Institute. . . . Aided by written instructions dropped from an aeroplane 200 fire fighters won five-hour battle with forest fire near Lakehurst (N. J.). . . . Two fire trucks collided in Philadelphia (Pa.) en route to blaze, killing George McConaghy, fireman, critically injuring three others, two of them bystanders. . . . Bertel E. Gasstron, aged 22, was burned to death when his auto got out of control, struck tree near Armonk (N. Y.), ignited. Bones of his leg pierced gas tank and escaping gas took fire. . . . Firemen from Mahopac (N. Y.) made run in motor boats to fire on Campus Island in middle of lake. One cottage was destroyed, but "braves" saved others. . . . Public school youngsters of Fort Worth (Tex.) are taught how to use fire extinguisher. . . . As result of fatal fire in New York City stable, which killed fire lieutenant and over 100 horses, more stringent fire regulations in stables are being prepared by A.S.P.C.A. . . . More than 20 persons were burned to death when lightning struck two adjoining houses in Manilla (P. I.) when wedding party was in progress. . . . "Hottest Story" of year broke at Natick (Mass.) when So. Natick firemen, unable to fight blaze in their own engine house, because of lack of long ladders, called on firemen from Central Station for aid. . . . Use of a 147-foot ladder helped Paris fire laddies save famous Louvre from fire which might have destroyed priceless pictures. Safe crackers in Boston (Mass.) were routed by fire when short circuit in connection they were using started blaze in a machine shop.

Note to contributors: If you do not read your news contribution in the next issue of FIRE ENGINEERING don't despair—if it's suitable it will ultimately find its way into print.

Editor, Watch Desk.

WHAT DO YOU KNOW?

The Editor of "The Watch Desk" welcomes contributions from readers of FIRE ENGINEERING that briefly give facts about interesting, odd things that have to do with fires, fire fighting, etc. Address "Editor, Watch Desk."

WHO'S WHO IN THE FIRE SERVICE

A Roster of Progressive Fire Officers and Others Who Are Members of the Seven Affiliated District Organizations of the International Association of Fire Chiefs

GREAT LAKES DISTRICT ASSOCIATION

(Great Lakes Association of Fire Chiefs)

ACTIVE MEMBERS

INDIANA

George Rosenberger, Chief, Alexandria.
C. Frank Clem, Chief, Anderson.
John C. Stahlhut, Chief, Fort Wayne.
Alex W. Dotson, Chief, Elkhart.
Thomas P. Clune, Chief, Gary.
William Nill, Chief, Hammond.
Fred C. Kennedy, Chief, Indianapolis.
Clem Smith, State Fire Marshal, Indianapolis.
R. E. Gammans, Chief, Kokomo.
A. E. Homann, Chief, La Porte.
Irvin C. Baumann, Chief, Michigan City.
Archie McCabe, Ex-Chief, Muncie.
H. E. Williams, Chief, Richmond.
William Freeh, Chief, South Bend.

ILLINOIS

E. J. Ryan, Chief, Aurora.
W. C. Thrun, Chief, Batavia.
Frank Clark, Chief, Belvidere.
James Hrash, Chief, Berwyn.
C. E. Rettinghouse, Chief, Centralia.
John Ely, Chief, Champaign.
Michael J. Corrigan, Fire Commissioner, Chicago.
Alfred Heinke, Ex-Chief, Chicago.
Frank C. McAuliffe, Chief, Chicago.
M. S. Phillips, Ex-Chief, Chicago Heights.
George Knol, Chief, Cicero.
Frank M. Davis, Chief, Danville.
William Platt, Chief, Decatur.
Paul Godesiabois, Chief, East Moline.
R. E. Whalen, Chief, Elgin.
A. N. Hofstetter, Chief, Evanston.
Albert L. Luedeke, Chief, Freeport.
Earl E. Cratty, Chief, Galesburg.
James E. Beaman, Chief, Great Lakes.
John O. Nygren, Chief, Joliet.
J. E. Hutchins, Chief, Macomb.
Albert Herring, Chief, Murphysboro.
Charles J. Foucek, Chief, Naperville.
M. H. Schmitz, Chief, Niles Center.
William C. Watters, Chief, Oak Park.
J. F. Jaeckel, Chief, Pekin.
A. H. Runge, Ex-Chief, Peoria.
Thomas D. Blake, Chief, Rockford.
August G. Schmidt, Chief, Rock Island.
James J. Delaney, Chief, Springfield.
G. M. Houren, Chief, Winnetka.
M. M. Reed, Chief, Wyanet.

MICHIGAN

W. P. Weeks, Chief, Battle Creek.
Harry C. Crumb, Chief, Bay City.
R. E. Mottesheard, Chief, Dearborn.
Stanley J. Bullark, Chief, Detroit.
Stephen J. DeMay, Ex-Chief, Detroit.
W. J. Israel, Chief, Detroit.
August Zado, Chief, East Detroit.
A. M. Jaeger, Chief, Ecorse.
Donald D. Post, Chief, Ferndale.
George Boughner, Chief, Grand Rapids.
George Dansbury, Chief, Grosse Pointe Farms.
L. Chauvin, Chief, Grosse Pointe.
J. M. Griffin, Chief, Hamtramck.
Floyd Baker, Chief, Highland Park.
C. Blom, Jr., Chief, Holland.
E. C. Daunter, Chief, Jackson.
J. Frank Van Atta, Chief, Kalamazoo.
Hugo R. Delfs, Chief, Lansing.
Fillmore Tyson, Ex-Chief, Lansing.
Edward T. Dubois, Chief, Monroe.
E. E. Willert, Chief, Mt. Clemens.
Chris Smith, Chief, Muskegon.
Harry L. Ridout, Chief, Muskegon Heights.
Frank Juhn, Chief, Pontiac.
Frank Shaller, Chief, Port Huron.
James L. Stapleton, Chief, Royal Oak Township.
Frank W. Bender, Jr., Chief, Saginaw.
Frank Trombley, Chief, Sault Ste. Marie.
Joseph Fifarek, Chief, Traverse City.
Gus Anselm, Chief, Wyandotte.

MINNESOTA

C. S. Dailey, Chief, Bemidji.
Frank W. Fuller, Chief, Brainerd.
Louis Turk, Chief, Chisholm.
John A. Fisher, Chief, Duluth.
J. H. MacWhiter, Chief, Eveleth.
Napoleon Atyotte, Chief, Hibbing.
Earl A. Traeger, Chief, Minneapolis.
N. B. Remley, Chief, Moorhead.
N. F. Quist, Chief, Virginia.
G. H. Putnam, Chief, Winona.

OHIO

John C. Nevel, Chief, Berea.
Barney J. Houston, Chief, Cincinnati.
James E. Granger, Chief, Cleveland.
O. F. Romann, Chief, Cleveland Heights.
E. P. Welch, Chief, Columbus.
Harry A. King, Chief, East Cleveland.
Charles A. Delaney, Chief, Lakewood.
David E. Hatt, Chief, Lorrain.
T. J. McFarland, Chief, Marion.
J. T. Doherty, Chief, Norwood.
M. M. Hand, Chief, Shaker Heights.
J. A. Falkner, Chief, South Euclid.
Grover L. Frock, Chief, Springfield.
Edward J. Green, Chief, Steubenville.
Fred T. Schlorf, Chief, Toledo.
Phillip J. Harty, Chief, Youngstown.

WISCONSIN

George P. McGillan, Chief, Appleton.
Elmer Fairbert, Chief, Beloit.
G. E. Smithers, Chief, Fond du lac.
Ralph H. Drum, Chief, Green Bay.
Fred J. Moeller, Chief, Kenosha.
Fred C. McGlachlin, Chief, La Crosse.
J. J. Kuplic, Chief, Manitowoc.
Peter Steinkellner, Chief, Milwaukee.
T. V. Looney, Chief, Oconto.
Chester Sroka, Chief, Portage.
H. E. Hanson, Chief, Rhinelander.
Charles W. Brandt, Chief, Sheboygan.
Cyril Bohne, Chief, Shorewood Hills.
F. F. Kirsling, Chief, Stevens Point.
J. L. Sweeney, Chief, Superior.
Arthur Rahn, Chief, Two Rivers.
Peter Wild, Chief, Waukasha.
Edwin Bryant, Chief, West Allis.

* * *

EASTERN DISTRICT ASSOCIATION

(Eastern Association of Fire Chiefs)

ACTIVE MEMBERS

(Continued from May issue)

NEW YORK

C. G. A. Fischer, Chief.
Raymond O. Frawley, Chief, Angola.
Charles W. Hagelston, Ex-Chief, Larchmont.
James J. Higgins, Chief, Schenectady.
Fred Knight, Chief, North Tonawanda.
William H. McBride, Ex-Chief, Buffalo.
William B. Sin, Chief, Patchogue.
O. G. Smith, Chief, Larchmont.

PENNSYLVANIA

A. E. Anderson, Chief, Bethlehem.
Edwin P. Clark, Chief, Wayne.
Samuel Croft, Chief, Bryn Athyn.
William H. Fischer, Acting Chief, Sharpsburg.
William B. Hall, Jr., Chief, Ogden.
Robert A. Jones, Chief, Cresson.
Frank Lord, Chief, Clifton Heights.
James C. McAllister, Chief, McKeesport.
Harry J. McLaughlin, Chief, Sharon Hill.
Harry E. Miller, Chief, Lancaster.
J. Wm. Morgan, Ex-State Fire Marshal, Dillsburg.
Frank Pollock, Fire Marshal, West Conshohocken.
A. S. Stauffer, Fire Marshal, Palmyra.
William G. Weaver, Ex-Chief, Gettysburg.
George S. Weir, Chief, O'Hara Township.
J. Jack Weiss, Chief, Philadelphia.

DELAWARE

Fred Brown, Chief, Wilmington.
William Thompson, Chief, Wilmington.

MARYLAND

John C. Bayne, Chief, Bar Harbor.
B. Horace Ford, Chief, Crisfield.
Fred U. Henderson, Chief, Pocomoke City.
George W. McCullough, Chief, Lansdowne.
Hiram D. Musgrove, Chief, Bethesda.
A. A. P. Orban, Chief, Catonsville.
William J. Tierney, Chief, Hillside.

NEW JERSEY

George Baumbach, Chief, So. Vineland.
Philip C. Beeler, Fire Marshal, Lindenwold.
A. L. Dallery, Ex-Chief, Ridgefield.
William De Ronde, Chief, Prospect Park.
Henry J. Gautschy, Ex-Chief, Hawthorne.
Thomas F. Gussner, Chief, Bloomfield.
Arthur Jacques, Chief, New Brunswick.
R. A. Jessen, Ex-Chief, Keansburg.
Walter McLain, Chief, Medford.
Edgar L. Murphy, Ex-Chief, Farmingdale.
Sydney Olrick, Ex-Chief, Haledon.
Oliver B. Presley, Ex-Chief, Long Branch.
Chester C. Smith, Chief, Farmingdale.
David G. Stuart, Chief, Ventnor.

ASSOCIATE MEMBERS

(Continued from June issue)

MARYLAND

Charles G. Engleman, Batt. Chief, Baltimore.
Howard Ittner, Baltimore.
John J. McGinity, Fire Commissioner, Baltimore.
Rudolph Merritt, Baltimore.
Harry B. Scheve, Batt. Chief, Baltimore.

NEW JERSEY

Fred Basch, North Bergen.
William M. Byrne, Asst. Chief, New Brunswick.
George P. Dorer, Asst. Chief, Hillside.
William J. Finnegan, Mt. Ephriam.
Joseph P. Hackett, Supt. of Repairs, Newark.
F. H. Lodge, Asst. Chief, Livingston.
George F. Wick, Captain, Bayonne.
Conrad A. J. Wingerter, Captain, Livingston.

NEW YORK

Edward C. Belsky, Lieutenant, Jackson Heights.
John J. Carroll, Deputy Chief, Mt. Vernon.
Jeremiah A. Cerney, Captain, Astoria.
Gustave G. Jacobs, Bronx.
Thomas B. Kilbride, Lieutenant, Bronx.
W. H. Johnson, New York City.
William R. Landy, Lieutenant, New York City.
Walter A. Leggett, Lieutenant, Mount Vernon.
Arthur J. Massett, Long Island City.
Dudley S. Mersereau, Fire Commissioner, Union.
Joseph D. Ober, Captain, Brooklyn.
Anton L. Petronelli, Batt. Chief, Astoria.
Dr. John F. Rogers, Deputy Chief, Poughkeepsie.
Gottfried Vomacka, Captain, New York City.

PENNSYLVANIA

A. Russell Aulenback, Asst. Chief, Lebanon.
Charles T. Bauer, Allentown.
John W. Caldwell, Philadelphia.
Keystone Fire Chiefs Association, Malvern.
C. L. Manross, Fire Commissioner, Meadville.
J. J. McGowan, Asst. Chief, Bradford.
John P. Merz, Sharon Hill.
Glen Pentz, Lieutenant, Greencastle.
Harry A. Rau, Allentown.
W. P. Stine, Asst. Chief, Duncannon.
John T. Young, Ex-Asst. Chief, York.

Chief J. H. Wohlers Honored

Chief John H. Wohlers, who has headed the Charleston Fire Department since 1932, was unanimously re-elected President of the South Carolina State Firemen's Association, at its convention at Charleston, S. C., June 8 and 9.

Other officers of the asociation also were unanimously re-elected. They are Chief F. E. Donnald, Greenville, First Vice-President; K. C. Billings, Lancaster, Second Vice-President; H. T. Danner, Beaufort, Third Vice-President; P. E. Wilburn, Union, Secretary-Treasurer, and G. H. Fischer, Orangeburg, Statistician. Next year's convention will be held in Darlington.

Approximately 275 delegates attended the meetings held at the St. John Hotel.

Governor Olin D. Johnston addressed the firemen at their thirty-third annual banquet. He congratulated the firemen on their work, praising them for saving lives and property.

Mayor Burnet R. Maybank, Charleston, spoke of the value of seniority as a basis for promotion in Fire Departments, and said he was a strong believer in promotion from within. He also welcomed the delegates at the opening session.

Competitive fire-fighting drills were held at the second day of the convention. State teams competed for the Maybank Trophy, presented by Mayor Maybank in behalf of the city.

The annual picnic was held at Ashley Park at the end of the session.

D. G. SPENCER.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

THE VALUE OR DETRIMENT OF HOLDING TIMED FIRE DRILLS

THE smallest division of time is the second. Not content with that, the second, in turn, has been broken up into fifths of a second by the makers of the average type of stop watch, and this small part of time has separated a winner from the field of "also ran."

Much has been said regarding the value of organized competition, particularly as regards fire drills. Some feel that the spirit of competition will prove an incentive for many to better their best time in order to match the skill of the other contestants. Others believe that timed drills are defeating the spirit of the training in Fire Department evolutions.

There are supporters to both sides of the question. The problem is discussed in this issue, and the question in full appears in the box on this page. Owing to the number of replies to this question, it will be concluded in the next issue.

Should you have some comments that you would like to add to this discussion, write to the "Round Table Editor," FIRE ENGINEERING, 24 West 40th Street, New York, N. Y.

Discussion of the Question

G. Dean, Chief, Orlando, Fla.: From a strictly practical point of view, I can see nothing in favor of drills conducted against time. I believe it would be a mistake for any training school to be conducted with only a view to time as its objective. It has been experienced that haste makes waste, both of time and effort.

Ralph J. Scott, Chief Engineer, Los Angeles, Cal.: We do not drill against time in our department. This applies to all our training work.

Drills against time sacrifice efficiency for speed, and while speed is necessary in a fireman's work, efficiency must be obtained to the greatest possible degree. It would seem more desirable to have the evolution performed correctly by taking the proper amount of time to do it, than to race through the evolution with an indifferent quality of work throughout, due to the sole thought of speed. I do not believe that it is necessary that evolutions be conducted against time in training members of the fire service. I do want the members of my department to proceed with all evolutions in a business-like manner, and with such speed as is consistent with correct and efficient performance.

I do not know of any points of superiority of the drilling against time over that of consistent ethical operations.

There are undoubtedly many arguments against the practice of drilling against time. The rivalry set up between different members and companies through this practice induces the individual member to shorten up his work as much as possible in order to make a record. There is always the inclination to have equipment "all set," as it were, with the sole thought of operating it speedily, and not giving sufficient consideration to reasonable thoroughness and safety.

Accidents are liable to happen when men are operating with the thought that they are working against time. The worst indictment, however, against the practice is that of the quality of work obtained. It should be evident that correctness of operations, where human life is at stake, should be of paramount importance.

R. J. VanFleet, Chief, Hastings, Neb.: I do not believe that drills conducted against time are beneficial. I think that the old saying, "Haste makes waste," holds especially true in Fire Department evolutions. Men are likely to be injured, equipment broken, or roughly used when speed is sought.

A thoroughly trained and disciplined company will, in my opinion, go through all evolutions much faster than a company which has been trained to work against time. The most essential point in training is to give all men a thorough knowledge of all equipment and apparatus, and if this is accomplished, speed will naturally follow.

James T. Cranney, Chief, Missoula, Mont.: I believe that drills, such as setting up pumping engines, laying of hose lines, placing ladders, etc., conducted against time are beneficial to the Fire Department, provided, however, that the men working on the teams are of practically the same age. I do not feel that it would be a good policy for the fire service to work men whose ages vary twenty-five or thirty years, against time. Statistics show that men between the ages of twenty-one and thirty-five are much faster physically than men who have reached the ages between thirty-five and fifty. The older men have something that the younger men lack—experience.

I do not believe that it is essential for evolutions to be conducted against time at the training school, where the men are working on the drill tower. My argument against such a practice is based on the theory that "it is far better to be careful, than to be sorry." In using the tower for drill purposes, it is only natural, especially among the younger men, to take unnecessary chances in order to beat the other fellow's time. This, I believe, is a very bad situation, and if condoned, will eventually lead to a serious accident or perhaps a death.

F. J. Roddy, Chief, Monroe, La.: I believe company drills are good in every way, but when there is competition between companies, the effect is not so good, as drills conducted against time are detrimental to the efficiency of the fire service. I think that in the case of company evolutions, it is necessary sometimes that they be conducted against time, but only if every detail is checked by the drill master, as the men sometimes omit small things that later may be serious at a fire. For the most part, I feel that in conducting these evolutions, there are too many chances of injuries to the men or to apparatus, to make it worthwhile.

Olander Lind, Chief, Kansas City, Kan.: I believe that the time factor is important in drill work to a certain degree, as it has the tendency to speed up what might be a slower person, if he knew he was not competing against time. On the other hand, there are

HERE IS THE PROBLEM

Do you believe that drills (such as those including the setting of pumping engines, laying of hose lines, placing ladders, etc.) conducted against time are beneficial or detrimental to the efficiency of the Fire Department?

Do you believe it necessary that evolutions be conducted against time at the training school?

What is there to be said in favor of conducting such evolutions against time?

What arguments against?

factors that offset the time element, when it comes to setting pumping engines. I am quite sure that if we instruct our drivers to work against time alone in spotting their apparatus at a hydrant, we will find that the work in the repair shop will pick up materially in the form of broken axles, transmissions and drive shafts. My opinion is that we should drill against time, as long as it is consistent with the positive and successful completion of the evolution being practiced. As to the question of laying hose, I would say that that is the best place to practice against time. When it comes to ladders, I feel it is more important to have them placed correctly than it is to get them up quickly.

I do not believe it necessary that evolutions be conducted against time at the training school. I want my drillmaster to show me at the drill tower just what I can expect at an actual fire. I don't want to see tricky and speedy evolutions practiced at the drill tower, if they cannot be put into effect at an actual fire. Here again, the question of perfection and completion of the evolution is more important than that of time.

The only thing that can be said in favor of the time factor is that it creates rivalry between not only the men, but companies as well. It may cause them to be more alert and on their toes, but this same rivalry may develop to the point where they would lose sight of everything but the time involved. They might fail to consider their own safety, the care of the apparatus and most of all, the fact that a completed evolution, even if it takes a few seconds longer, is far better than one that is done so rapidly that something goes wrong.

After all is said and done, the thing that I desire most in my department is dependability and efficiency, and I cannot see that time is the most important factor in either of these qualifications.

W. J. Mohr, Chief, Santa Monica, Cal.: I believe drills conducted against time are most beneficial, for the experience gained is lasting. One can only learn to do a thing by actual experience. The laying of hose lines and the raising of ladders calls for team work that is so necessary for an efficient department.

Conducting evolutions against time in the training schools is the only method by which the instructor can judge if the men are actually learning them.

In conducting evolutions against time, you get to know your men better and the efficiency of your department is increased. If a time limit is placed on these evolutions, men who are sometimes slow will often be forced to work more quickly, because of the competition involved.

P. E. Du Paul, Vancouver, Wash.: In our department, each company drills twice a week during the good weather. Each man has a typewritten copy of the drills and is given plenty of time to study them. We then take the men out on the street and go through each evolution very slowly and explain why each part is done in a certain way. As the men learn the drills, they naturally gain speed. I personally think and know that Fire Departments acquire speed and perfection through drills.

I am not very much in favor of drilling against time. Occasionally, after the men have become accustomed to the different drills, we time both companies.

I have found that in drilling against time, some of the men, in their eagerness to be the first finished, skip some of the details that would be very important at a fire.

A crack runner or baseball player does not break a record in the first game he plays, neither does a fireman become an expert during his first drill. I believe in the old saying, "Practice makes perfect."

O. J. Parker, Chief, Atlanta, Ga.: We seldom drill against time. Sometimes, just for experimental purposes, we will time a crew raising a fifty-foot ladder.

I do not think it necessary to go through evolutions against time, because there is such a thing as overtraining.

Howard Travers, Chief, Baltimore, Md.: I believe that drills and evolutions conducted against time are beneficial to the efficiency of the department on the scene of a fire. Experience has taught that evolutions will be performed on the fire ground in the same way as at a company school. If men don't have this training, they are apt to slow up at a fire.

Charles L. Slade, Chief, Des Moines, Ia.: I am opposed to time limitations on drills, believing in the old adage, "Haste makes waste." I am of the opinion that slower and more perfect completion of evolutions will give better results on the fire ground. In addition, there will be less chance of injury to the participants, with the resulting loss of service from actual duty.

Luther P. Willis, Chief, Pueblo, Col.: I do not feel that working against time is detrimental. Although we have never drilled against time, we stress the necessity of not losing any moments, as the manner in which the men roll in to a fire and place their equipment is what really counts, both at the drill tower and at a fire. Speed is just as essential after a company has arrived at a fire, as it is answering an alarm. However I do not feel that safety should be sacrificed in order to increase speed.

William L. Ryan, Chief, Dubuque, Ia.: Conducting drills against time is more beneficial than otherwise. However, I do not believe that evolutions at the training schools should be conducted in the same manner. The National Board of Fire Underwriters and many state agencies having to do with Fire Departments and Fire Department efficiency, do not approve of the breakneck method of drilling, especially in the training of new men. They consider it more advisable to include a reasonable speed, so that more complete accuracy may be obtained, thereby making the evolutions more generally understood.

Lawrence E. Reif, Chief, New Haven, Conn.: In my opinion, it is detrimental to conduct drills against time, unless it is done at a firemen's convention, in competition. I do not believe that it is necessary for evolutions to be conducted against time at the training school. We used to have a new class on its graduation, lay a hose line up the drill tower against time, but such work is not necessary. In some cases, serious accidents have been caused by such evolutions.

Thomas H. Shipman, Chief, New London, Conn.: I believe that evolutions against time should be used in the periodical company drills, but where new men are being trained for the department, I do not think the time element should be used.

Most departments make it a point to hold weekly or monthly house drills to insure team work among the men at fires. At their annual or semi-annual turn at the drill school, the drillmaster can easily determine whether or not this practice has been carried out, by using the time element.

For new men coming into the department, I do not believe the time element should be used, as these men should be trained more for accuracy in the evolutions, than for speed. The time element should come after their assignment to a company.

Herman E. Gutheim, Chief, Cambridge, Mass.: Every Fire Chief should believe in drills. Imagine an army or navy without proper drilling. Where would they fit in in time of war? It is just as important to drill a Fire Department as an army.

All companies in our city drill twice each year (both platoons) at the drill tower under the direction of the drill master. In my opinion, the time factor is not important, but it promotes rivalry among the different companies to see which one has the most pep, and also serves to keep the officers and men on their toes. However, there is often danger of accidents occurring.

William Freeh, Chief, South Bend, Ind.: We are of the opinion that the various Fire Department drills, such as the setting of pumping engines, laying of hose lines, placing of ladders, which are conducted against time, are beneficial to the efficiency of the Fire Department.

The timing of aspirants during their training period evolutions, is not as important as it will be, when the men become more experienced in conducting these drills. When an evolution of this type becomes a contest for superiority between fire companies, it is only natural that added determination and the will to succeed will create a desire to progress more readily for actual fire conditions.

The prevailing argument against conducting such evolutions against time, seems to be the possibility of serious injury to the men while taking part in them.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Due to the large number of replies that have been received for this discussion, it has been necessary to continue this round table in the next issue.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Spontaneous Heating of Palm Oil

To the Editor:

As a reader of FIRE ENGINEERING, I would like to know if palm oil is subject to spontaneous heating. If so, at what degree Fahrenheit?

L. L.

Answer: Palm oil has a very pronounced fermentation value, so that spontaneous heating may be produced under certain conditions. It would not, however, be classed as an oil highly subject to spontaneous ignition.

Heating may take place at practically any temperature commonly encountered, particularly in Summer. Once spontaneous heating starts, it speeds up at an increasing rate.

Direction of Streams, Etc.

To the Editor:

I have been following the Promotional Study Course in FIRE ENGINEERING since it began in September, 1935, and in the section, "Completion Statements" on two occasions there have appeared statements which conflict with known practices and facts. The statements are as follows: "Hose streams should be directed at the base of the fire," and "Carbon dioxide gas if inhaled is practically harmless."

In the first statement, does the word "fire" refer to an incipient blaze? If not, we are taught to direct a stream above the fire so that it will strike the ceiling of a room and thus cover a wider area instead of using a so-called one spot delivery.

In connection with the second statement, newspapers all over the country last summer carried warnings against putting dry ice, a product of carbon dioxide, in containers in automobiles and keeping the windows closed, on the theory that it would keep the car cool. Many people died as a result of this procedure. Will you please explain why?

E. F. S.

Answer: A fire stream should be directed at the base of the fire, for it is there that the materials are burning. The fire is extinguished by cooling the materials which are afire to a point below their ignition point. Incidentally, this question was intended to point out that operation of streams on flames or smoke is worthless, and that the burning materials themselves must be struck by the water.

Regarding the question of carbon dioxide gas, this gas is non-poisonous. It will cause death, however, if it dilutes the atmosphere to a point where the percentage of oxygen remaining is insufficient to support human life. The same thing would apply to nitrogen, which constitutes 78.03 per cent by volume of air. If the percentage of nitrogen were materially increased at the expense of oxygen, death would also occur from suffocation.

CTC-Gasoline Mixtures

To the Editor:

I would like to get a little information about gasoline and carbon tetrachloride.

It is my understanding that these two liquids, if properly blended, can be safely used without any danger of explosion. I have had this tried out; one half tetrachloride and one half gasoline, but it still burns, but the flash of course is not so lively as it would be if pure gasoline.

When you advise what proportions to mix, will you kindly advise whether it is by weight or by volume.

W. E. S.

Answer: References to various handbooks indicate that a mixture of approximately 50 per cent carbon-tetrachloride and 50 per cent gasoline is inflammable.

It is possible you will get a flash over the liquid, but the liquid should not maintain a flame.

Ordinarily, carbon-tetrachloride will vaporize more quickly than heavy gasoline, so that while you may have a 50-50 mixture at the start, the proportion of carbon-tetrachloride will be reduced in time.

The percentages given above are by volume.

Pressure and Discharge Calculations

To the Editor:

Will you please advise me of the difference in flow and pressure of:

1. Hydrant pressure—80 pounds. 100 feet of 2½-inch hose and 1-inch nozzle from each side of hydrant.

What would be the nozzle pressure? How many gallons per minute?

2. The same hydrant is used with a siamese connection. One side of the hydrant is closed for this test.

The layout is the same as in the previous problem.

Hydrant pressure is 80 pounds.

What will be the nozzle pressure and the flow per minute?

P. R. K.

Answer: The answer to Question 1 is as follows:

N. P. = E. P. ÷ (1.1 + KL).

N. P. is nozzle pressure in pounds per square inch.

E. P. is engine pressure in pounds per square inch.

K is a factor depending upon nozzle and hose diameters; for 1-inch nozzle on 2½-inch hose, K is 0.105.

L, the number of 50-foot lengths of hose in the line is 2.

Then N. P. = $80 \div (1.1 + 0.105 \times 2)$.

$= 80 \div 1.31$.

= 61 pounds nozzle pressure approximately.

Discharge = $29.7 \times d \times d \times \sqrt{P}$, where "d" is the nozzle diameter in inches, and P, the nozzle pressure in pounds per sq. inch.

Discharge = $29.7 \times 1 \times 1 \times \sqrt{61}$.

$= 29.7 \times 7.8$.

= 232 gallons per minute approximately from each of the two nozzles. The total discharge from the two nozzles would be twice amount, or 464 gallons per minute.

Answering your second question, there would be no appreciable difference in nozzle pressure and discharge from the results secured in Answer 1, for the increase in friction loss due to the addition of the Y connection would be negligible.

Numbers of Police and Firemen

To the Editor:

What is the number of policemen and firemen in first, second and third class cities of New York State?

G. B.

Answer: The following list gives the names of cities, their populations and the number of firemen and policemen on their respective forces:

City and State	Population	No. of Policemen	No. of Firemen
New York, N. Y.	6,930,446	18,657	9,901
Buffalo, N. Y.	573,076	1,285	957
Rochester, N. Y.	328,132	473	481
Syracuse, N. Y.	209,326	328	381
Yonkers, N. Y.	134,646	254	183
Albany, N. Y.	127,412	295	235
Utica, N. Y.	101,740	169	188
Schenectady, N. Y.	95,692	169	129
Binghamton, N. Y.	76,662	115	149
Niagara Falls, N. Y.	75,460	117	116
Troy, N. Y.	72,763	179	139
Mount Vernon, N. Y.	61,499	128	42
New Rochelle, N. Y.	54,000	136	89
Elmira, N. Y.	47,397	77	75
Jamestown, N. Y.	45,155	54	67

By William Paul Babcock

"School Days, School Days, Dear Old Golden Rule Days!"

THIS month's caption is inspired by a letter just received from Capt. S. C. Sharnenbroich, of St. Cloud, Minn., who says he has been enjoying this scribbling for some time and now wishes "further light."

He says he has been teaching in the zone training schools thereabouts confining his work principally to first aid to injured. But has been informed by the Director of these schools that he must now include salvage work, and he wants material for such instruction.

Well, it certainly does look as though salvage work is coming into its own, and going to town, becoming a specified part of the curricula of the nation's best emporia of knowledge in firemanics.

And while it may seem facetious or egotistical, I can't refrain from saying *"I told you so!"* I saw it all 22 years ago, when dear old Capt. Sid Johnston, of the New York Patrols, fathered me in the study of this work.

Oh, yes, and mention of that venerable smoke-eater brings up a subject I hope to enlarge upon in this journal in the very near future. The New York Fire Department recently signally honored Cap'n. Sid by striking off an official medal for life-saving called the "Albert Sidney Johnston medal," the first one being presented this year. Next year members of the New York Fire Patrol will be eligible to compete for this medal, marking official recognition by the city and its wonderfully efficient Fire Department, of the hazards and bravery of the "Patroleos."

And now for the *pièce de resistance.*

As related in our last chapter, we have an eminent champion of the size 14x18 salvage covers in the person of Chief Frank C. McAuliffe, of the Chicago Fire Patrols; so the remainder of this column shall be exclusively his to state his view, and if there are any who wish to take up his cudgels, I shall be glad to include them next month. Then, after they have all had their say-so, I'll expect the "12x18ers" to "rebuttal," as the lawyers say.

Says Chief "Mack": "In the old days when oiled duck covers were the best obtainable, a 14x18 foot cover would weigh about 38 pounds. Then a standard carry of two covers for a patrolman would be considerable load for a man when it was necessary to carry covers up several floors, and consequently weight was an important factor in making a cover 12x18 feet.

"Present day 14x18 foot covers of the best quality weigh about 27 pounds and two covers of that weight should not be excessive. The additional 2x18 foot of cover is a distinct advantage.

"Stack furniture in an average bedroom, use a 12x18 foot cover and then try a 14x18 foot cover and you will agree with me I am sure. When it comes to covering large areas, the extra two feet mean less lap and consequently more efficiency.

"I believe New York continues the use of 12x18 foot covers for two reasons. They still have in service a majority of oiled covers and I agree that a 12x18 foot cover is a proper size for that type. Also their cover racks and dry rooms are arranged to handle that size and considerable expense would be involved if a change were made. However, I predict that New York will eventually take advantage of the light weight in covers and change over to the larger size."

What do you think?

Southeastern Chiefs Honor Johnson

Chief C. M. Johnson, Knoxville, Tenn., was elected President of the Southeastern Division, I.A.F.C., at a convention held in Knoxville. The other officers are Chief Frank H. Bennett, Durham, First Vice-President; Chief Irby Klinck, Memphis, Second Vice-President. The next convention will be held at Durham, N. C. The following papers and discussions were held during the convention:

"Fighting Fires Involving Toxic or Irritant Gases," by Chief W. W. Stephens, Monsanto Chemical Works, Anniston, Ala.

"Benefits Derived from State Fire Department Training Schools," by Chief H. R. Chase, Miami, Fla.

"Vocational Training as Outlined by the Committee of the I.A.F.C. and Sponsored by the U. S. Government," by Chief R. A. Bogan, Baton Rouge, La.

"Safeguarding Firemen from Poisonous Gases While Extinguishing Fires, and First Aid," by Herman Witt, Knoxville Fire Prevention Bureau.

"Buying Parts and Assembling Apparatus, What a City Gains by This Method," by Chief W. Q. Dowling, Jacksonville, Fla.

Round Table Discussion:

Will the Indian Fire Pump take the place of the 2½-Gallon Soda and Acid Hand Extinguisher?

What experiences have you had with the Fog Nozzle?

"Obsolete Apparatus Still in Service," by L. C. Sledge, Southeastern Underwriters Association, Atlanta, Ga.

"Preparedness in Times of War in Fighting Poison Gases and Fires Caused by Bombs Dropped from Aeroplanes," by Chief R. A. Foster, Portsmouth Navy Yard, Portsmouth, Va.

"Arson Investigation by Fire Departments," by Chief J. A. Weill, Knoxville Fire Prevention Bureau.

"Testing Ladders," by Chief R. A. Foster, Portsmouth Navy Yard, Portsmouth, Va.

"To What Extent Should the Fire Chief be Concerned with Fire Prevention Factors in Building Construction?", by Chief D. W. Brosnan, Albany, Ga.

"What Memphis Is Doing About Fire Prevention," by Chief Irby Klinck, Memphis, Tenn.

Cogan Chief of Portsmouth, N. H.

Deputy Chief George I. Cogan, Portsmouth, N. H., has been appointed Chief to succeed the late Chief William F. Woods.

Chief Cogan is a Past-President of the New Hampshire Firemen's Association and is Treasurer of the Portsmouth Firemen's Relief Association.

HARRY BELKNAP.

Campion Promoted

Captain Martin J. Campion, Waterbury, Conn., Fire Department, who has held the post of drillmaster in that city for several years past, has been promoted to Deputy Chief. Campion was the first Connecticut fireman to graduate from the New York Fire College. He will be next in command under Chief Thomas F. Cavanaugh.

THOMAS F. MAGNER.

Sherwood Brockwell, State Fire Marshal of North Carolina, Past-President of the S. E. Assn., center, being fed by Chief R. A. Bogan, of Baton Rouge, La., Past-President of the International Assn. of Fire Chiefs, on right, and Chief Dean of Orlando, Fla., on left.

Mrs. Parker and Chief O. J. Parker, of Atlanta, Ga., at the fish fry. Chief Parker is Retiring President of the S. E. Assn. of Fire Chiefs.

Chief Sol Green, Gadsden, Ala., and Chief R. H. Baughan, Secy-Treas., S. E. Assn. of Fire Chiefs.

Chief Frank Bennett, of Durham, N. C., First Vice-President of the S. E. Assn., and host of next year's convention, singing at the fish fry. Chief Bennett is widely known as the "singing chief." Chief W. Q. Dowling, Past-President, S. E. Assn., center, and Chief D. W. Brosnan, Albany, Ga., Past-President, International Assn. of Fire Chiefs, on right.

Enjoying the Fish Fry at the Knoxville Convention of the Southeastern Association of Fire Chiefs

Fire Razes Store Block

Five stores, a garage, and two small cottages, were leveled and a hotel badly damaged in an early morning fire in the business section of Watch Hill, R. I.

Fire was discovered about 3 a.m. The entire block was in flames upon the arrival of the Watch Hill Fire Department and aid was immediately summoned from Westerly and Misquamicut. The Coast Guard station also sent a detail to aid the firemen.

It was not until 7:30 a.m. that the fire was finally brought under control.

WILLIAM C. PECK.

Ruins After Watch Hill, R. I., Fire

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of June, 1938. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending June 30	Loss in Thousands of Dollars
Thomasville, Ga.—Glen Arden Country Club destroyed	80
Huntington Park, Cal.—Desser Tire Co. plant damaged	400
Sea Bright, N. J.—Yacht owned by A. C. Hoffman, at dock of Sea Bright Yacht Club	65
Brantford, Ont.—Freight warehouse of Finch & Sons	50
Aulander, N. C.—Garage and Salesroom of C. H. Jenkins Co.	50
Fitchburg, Mass.—Bldg. occupied by E. H. Lane Co. and others	50
Kelso, Wash.—Methodist Church and adj. property	65
Mt. Pleasant, Iowa—Crane Hardware store and adj. business property	50
Drifton, Pa.—Property of Mrs. E. C. Young at Windy Hill	65
Tacoma, Wash.—Plant of Tacoma Sash & Door Co., damaged	80
Saginaw, Mich.—Whse. of Creasey Wholesale Grocery Co.	50
Charlestown, Mass.—Pier of Mystic Terminal Co., damaged	65
St. Augustine, Fla.—Timber bridge, North River, on State Rd. 78	70
E. Boston, Mass.—Dock coal bunker of Suffolk Coal Co., damaged	50
Chicago, Ill.—Miller Amusement Engerprises —West 59th St.	50
Sabine Pass, Texas—Consolidated School building destroyed	50
Providence, R. I.—Bass Rock Cottage, Narragansett Pier	65
Klamath Falls, Ore.—Property of Crater Lake Lumber Co.	80
St. Luc, Que.—Business and residential property	200
Valleyfield, Que.—Plant of Valleyfield Coated Paper Mills Co.	165
Toledo, Ohio—Property occupied by Ideal Laundry, 1928 Canton St.	50
Carthage, N. Y.—Sawmill of Adirondack Core and Plug Co., destroyed	65
Chicago, Ill.—Bldg. occupied by Oscar Iber Co., W. Randolph St.	80
Lulu Island, B. C.—Dwellings of P. A. Gillies and M. Gray, destroyed	50
Vancouver, B. C.—Garage of Boultbee, Ltd., destroyed	80
Woburn, Mass.—Dow Mansion destroyed	50
Wagener, S. C.—Wagener high school building destroyed	50
Northville, Mich.—Michigan Wood Products Co., damaged	70
Malartic, Que.—Chateau Malartic Hotel destroyed	55

High School Destroyed

Within four minutes, seven hundred students had filed out from the Centerville High School, Centerville, Ia., when an alarm was sounded recently. It was not until the students heard the approach of fire apparatus, that they realized that this was not the customary fire drill.

It is believed the fire started in a storeroom on the second floor. Flames spread so rapidly that Chief Ed Davidson, of the local department, asked for aid from a nearby CCC camp. The CCC youths entered the burning building and carried out as much of the students' belongings as possible before falling walls prevented progress.

Fighting the Fire in Centerville, Ia., High School

New England Observes Firemen's Day

"Firemen's Memorial Day" was observed throughout the New England States on June 12, according to the annual custom which makes the second Sunday in June the day for holding services and decorating the graves of firemen in the various cemeteries.

At Forest Hills Cemetery, in Boston, the memorial oration was delivered by Mayor Maurice J. Tobin, and there was a large delegation of Boston firemen, led by Fire Commissioner William Arthur Reilly and Chief Samuel J. Pope. Music was furnished by the Boston Fire Department Band.

Prior to the march to the cemetery a bronze memorial tablet to the late John J. Noonan, hoseman killed in the Newberry Store Fire, was unveiled at the quarters of Engine Company No. 33, Boylston and Hereford Streets. This tablet was presented by the Boston Sparks' Association.

In Quincy, the corner-stone of the new Central Fire Station was laid in connection with the memorial service. Lieutenant Governor Francis E. Kelly spoke at the services of the Malden Fire Department in Forestdale Cemetery.

Somerville held a memorial mass for

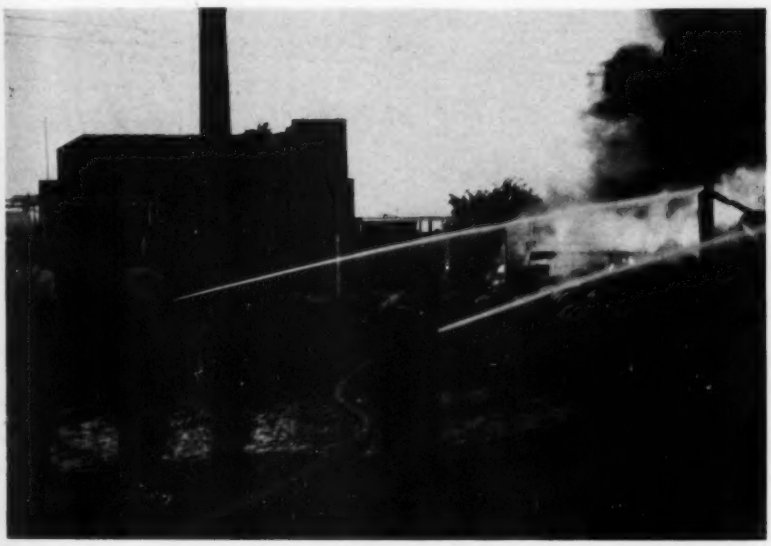
firemen in St. Joseph's Church. The parade to the church was led by Mayor John M. Lynch and Chief John C. McNally, with a detail of 150 firemen.

In Everett a new granite memorial was dedicated on the lawn of the fire alarm signal station. Congressman Arthur D. Healey was the principal speaker. Chief James J. Evans, Everett Fire Department, had charge of the arrangements.

HARRY BELKNAP

Murphysboro Fights Oil Fire

Fire of unknown origin broke out in the section of Murphysboro, Ill., that is known as Oil City, and gave Chief Albert Herring and his men a good battle.



Fighting the Oil Fire at Murphysboro

Ten oil companies are located in that zone, some with four or five large storage tanks, mounted on concrete columns, with dikes surrounding the foundations. The oil city covers four city blocks, with plants in a row, side by side.

The alarm came in at 6:15 p.m., from the Standard Oil Company's plant. All the equipment was sent to the fire, and Carbondale moved into Murphysboro to cover up for other calls.

Firemen were aided by the wind, which blew in a favorable direction. Firemen left at 9 p.m., but a patrol remained to guard the property.

Chief John F. Nute Dead

Chief John F. Nute, Rochester, N. H., Fire department, died on June 22 at his home following a short illness. He was 76 years old and had been Chief for 25 years, and a member of the department for 62 years. He was born in Barrington, N. H., and came to Rochester with his parents when he was six years old.

He attended the Gonic School and at the age of 14, joined the Tiger Engine Company as "torch boy." He later served for 10 years as Captain of the Cocheco Hose Company. He was employed in the freight department of the Boston and Maine Railway, while serving as a call fireman. He was elected Chief in 1914.

HARRY BELKNAP

Signal Men Meet

The quarterly meeting of the New England Section of the International Municipal Signal Association was held in Providence, R. I., on June 8 and 9. H. K. Mann spoke on "The Use of Telediphone in the Municipal Signalling Field" and E. W. Davis read a paper on "Non-Metallic Sheath Cables for Municipal and Utilities Service." Dr. H. B. Friend discussed "The Control of Carpenter Ants in Telephone Poles." There was a discussion of the false alarm problem and of other matters of interest to fire alarm superintendents.

Supt. Ames, of Providence, acted as host, and the meetings and banquet were held in the Providence Biltmore Hotel.

HARRY BELKNAP

Chief McAlpine Honored

Chief G. R. McAlpine, of Oklahoma City, was elected President of the Oklahoma State Firemen's Association, at their convention held at Muskogee.

The other officers are Chief R. M. Pickens, Muskogee, Vice-President; Charles Slemp, Oklahoma City, elected life time Secretary-Treasurer last year; J. C. Warf, Tulsa, and Charles Safford, Picher, members of the Legislative Board.

Among the speakers was Jay W. Stevens, Fire Marshal of California, who spoke on past and present methods of fire-fighting.

"Care and Maintenance of Fire Apparatus," was treated by George L. Bird, Pawhuska.

At the close of the convention, those present rose to their feet as a compliment to Mr. Slemp, life-time Secretary-Treasurer.

The next convention will be held at Tulsa.

Texas Firemen Meet

The sixty-second annual convention of the Texas State Firemen's Association was held in Amarillo, Tex., with President Lewis Haynes, San Marcos, presiding. During the meeting, there was an exhibit of fire prevention posters made by school children.

The new President is G. E. Dalton of Coleman. The new Fourth Vice-President, the only new officer elected, is Chief Carlton Odom, Jacksonville. The association elects a new Fourth Vice-President each year, and the other officers advance one step.

Galveston, El Paso, Waco, Austin and Harlingen presented bids for the 1939 convention, and Harlingen was selected.

Delaney Heads Ohio Chiefs

Chief C. A. Delaney, Lakewood, was elected President of the Ohio Fire Chiefs' Association at the twenty-first annual convention, which was held at Lima on June 7 to 9.

The other officers are W. B. Fassnacht, Barbertown, First Vice-President; W. R. Schick, Westerville, Second Vice-President; Philip J. Harty, Youngstown, Secretary-Treasurer; Robert Leedom, Portsmouth, and Grover L. Frock, Springfield, Trustees.

A resolution was approved that a committee be appointed to make recommendations for the enaction of a law for licensing all public buildings by the Fire Marshal, giving him authority to refuse such license if the building did not meet with the minimum requirements provided by the Division of Factory and Workshop, of the State Industrial Commission.

Other approved resolutions were that the Emergency Relief Committee, of the Ohio legislature be asked to make an emergency appropriation for the State Fire Marshal's office to carry out its work; that a communication be sent to the Mayor of New Philadelphia, expressing the association's disapproval of the recent move of lowering the Chief's salary to twenty-five dollars a month and placing him on a part time basis.

D. L. Rockwell, State Fire Marshal, was the principal speaker at the annual banquet, which was attended by two hundred Chiefs and their wives. He glorified the work of the firemen and promised to help Chiefs in their fight against incendiarism.

Short talks were given at the meeting by Chiefs Frock, Springfield; E. P. Welch, Columbus; Edward J. Green, Steubenville; Tom McFarland, Marion; Bob Leedham, Portsmouth, and others.

Chief Grover L. Frock, the retiring President, and Chief W. B. Wilcox, host to the association, were presented with traveling bags, and gifts were made to other persons who contributed to the success of the convention or the welfare of the association.

About three hundred were present at the convention, which lasted three days.

In commenting on the convention, a local newspaper said:

"Of all conclaves held in this city of conventions, yours was one of the most glamorous, as well as one of the most orderly. To most of us, the figure of a Fire Chief symbolizes unselfish service and unflinching courage in the face of personal danger."

Manufacturers' Announcements

Fog Nozzles

A new line of fire-fog nozzles has been announced by the Spray Engineering Company, Somerville, Mass. After exhaustive tests at pressures from 20 to 160 pounds, the Sprayco portable fire-fog equipment has been approved by the Factory Mutual Laboratories of the Associated Factory Mutual Fire Insurance Companies. The nozzles may be used directly to a hose or in conjunction with play pipes which are furnished in several sizes. An illustrated folder describing the equipment is available.

Using the Fire-Fog Nozzle to Put Out a Test Oil Fire

Elizabeth Chiefs Plan Boat Trip from New Orleans

Chief William H. Kenah, Elizabeth, N. J., has had a special itinerary prepared for the Elizabeth district group that will attend the New Orleans convention of the I.A.F.C. The party will go down by train and will return by boat from Savannah.

Any one wishing to join this party is invited to do so. The group will leave New Orleans on the morning of the last day of the convention. Those desiring to stay to the final convention session and still join the party on the return trip, can do so by flying to Atlanta and then taking a train to Savannah.

The itinerary of the trip follows:

Schedule—Going Trip

Sunday, September 25—Lv. New York, P.R.R., 2:25 p.m.; Newark, P.R.R., 2:40 p.m.; Elizabeth, P.R.R., about 2:50 p.m.
Monday, September 26—Ar. New Orleans, L. & N., 9:30 p.m.

September 26, 27, 28 and 29 in New Orleans

Friday, September 30—Lv. New Orleans, L. & N., 8:45 a.m.; Ar. Montgomery, L. & N., 5:50 p.m.; Lv. Montgomery, A.G.L., 6:25 p.m.
Saturday, October 1—Ar. Savannah, A.G.L., 8:15 a.m.; Lv. Savannah (Savannah line), 4:00 p.m.
Tuesday, October 4—Ar. New York, (Savannah line), 7:00 a.m.; Lv. New York (Savannah line), 5:00 p.m.
Wednesday, October 5—Ar. Boston (Savannah line), 12:00 noon.

Cost per Person to New York

One Person Lower Berth	Two Persons Compartment
$127.44	$134.19 each

Two Persons Drawing Room
$140.44 each

The above costs include round-trip rail and water transportation, round-trip Pullman as indicated, minimum rate room and meals on steamer. Outside room with bath on steamer, upper and lower berths, costs $5 per person additional.

The costs also include meals, waiter and porter tips, between New York or Elizabeth and New Orleans, transfer from station to hotel; also four nights' lodging at Roosevelt Hotel, based on two persons to a double room with bath. Single rooms are $1.50 per day higher.

Meals, tips, etc., on the return trip are not included.

Mayor Elected President

Mayor Gilbert Wheelock, Safford, Ariz., was elected President of the Arizona State Firemen's Association at the close of the annual convention held at Nogales.

The other officers are F. E. Porter, Phoenix, First Vice-President; John J. Curry, Tempe, Second Vice-President, and H. W. Reggin, Prescott, re-elected Secretary-Treasurer. Mr. Reggin starts his ninth consecutive term in that office.

The Executive Committee consists of W. P. Fleming, Williams; Ted Allen, Glendale; Fred King, Tucson, and B. E. Porter, Kingman.

At the close of the convention, a special train took the firemen to Magdalena, Sonora, fifty miles south of the border, to enjoy a fiesta in Mexico. A total of 240 persons registered for the convention. The 1939 gathering will be held in Winslow.

Cody, Chief of Cordele, Ga.

John L. Cody, of Fort Lauderdale, Fla., has been appointed Chief of Fire Department, Cordele, Ga. He has served as Chief at Fort Lauderdale for several years. Chief John L. Cody is the son of the late Chief W. B. Cody of Atlanta, Ga.

Caine Heads Washington Firemen

G. E. Caine, Camas, was elected President of the Washington State Firemen's Association at the annual convention held at Wenatchee. The other officers are Jens Bugge, Sequim, First Vice-President; Pete Moore, Yakima, Second Vice-President; Hugh Leslie, Auburn, Secretary; Charles Tracy, Arlington, Treasurer. The next convention will be held at Spokane.

Minnesota Firemen Meet

A three-day convention of the Minnesota State Firemen's Association was held at Wadena with a record registration of 850.

Chief George Fish, Sauk Centre, was elected President; Chief Nels C. Quist, Virginia, First Vice-President; Chief W. L. Bundy, Second Vice-President; Fred Pfaender, New Ulm, was re-elected Secretary; P. N. Pederson, Moorhead, Treasurer, and Charles S. Dailey, Bemidji, Statistician.

The 1939 convention will be held at Sauk Centre, in 1940 at Virginia, and in 1941 at Alexandria.

Kiernan, Chief of Newark

Peter Kiernan has been appointed Chief of Newark, N. J., filling the vacancy caused by the retirement of Chief John J. Towey a year ago.

He joined the department on December 15, 1906. He was promoted to Lieutenant on November 1, 1916, and Captain on December 16, 1918. Less than a year ago, he was made Deputy Chief.

Chief Peter Kiernan

Chief Kiernan is fifty-six years old, is married and has three sons. Two sons have applied for posts as firemen.

Battalion Chief John J. Wilkinson was promoted to Deputy Chief to fill the post formerly held by Kiernan.

The FEDERAL '77' DOUBLETONE SIREN

with the Red Flashing Light

For expensive fire apparatus *Specify* a Federal "77" siren because:—It causes immediate attention by its loud tone and bright flashing light—gets you to the scene quickly—safely. Assures quick getaway—protects your men and equipment. Increases efficiency — commands traffic to obey—saves lives—avoids accidents. Don't buy cheap substitutes when a few pennies more gives you outstanding performance—rugged construction — never failing electric brake. All the more reason why you should *Specify* a Federal "77" Doubletone Siren.

See our complete line of sirens in our newly illustrated bulletin No. 61. Write for it TODAY!

FEDERAL ELECTRIC COMPANY, Inc.
8702 SOUTH STATE ST. CHICAGO, ILLINOIS

D. B. SMITH & CO., Charleston, Arkansas
Utica, N. Y.

Dear Sirs:—

Nothing but INDIAN FIRE PUMPS for me from now on whenever our department is in need of any pumps, since they are far superior to any other hand pump. An alarm came in which was a roof fire well under way and a high wind blowing. Two men with the INDIAN FIRE PUMPS on their backs climbed the ladder to the roof and went into action, and did they do the work!

I've been on the volunteer department for twelve years, and never have had results like this. It was a surprise to all firemen, and fifty councilmen, who were there, as we not only saved a home, but only used the two INDIAN FIRE PUMPS.

We now have a 1½ ton truck which has several INDIAN FIRE PUMPS on it. INDIAN FIRE PUMPS are worth their weight in gold, because of the results we can produce with them.

Yours very truly,
ALFRED E. SCHMUKI, Fire Chief.

Chief A. E. Schmuki

"NOTHING BUT INDIANS FOR ME"

SAYS CHIEF A. E. SCHMUKI OF CHARLESTON, ARK.

The Indian is a reliable Fire Pump for fighting Grass Fires, Brush Fires, Awning Fires, Roof Fires, Spot Fires, etc. Every part is built for long and hard service. The tank is made of heavy galvanized steel with all seams locked together and sweat with hot solder. Tank is curved and form-fitting to fit back snugly. The top of tank will not catch or drip water. The filler cap is made of solid brass and has a removable brass strainer to prevent rubbish from entering tank. Filler cap is 6" in length, permitting rapid filling of tank and is chained to tank to prevent loss. Heavy adjustable carrying straps with snap ends are furnished. The carrying strap rings are firmly riveted to tank and will never break loose. Uses only clear water. Pump throws 50-ft. stream. Truck carrying rack available.

D. B. SMITH & CO., 406 Main St., Utica, N. Y.

Mail Coupon TODAY! *Send for CATALOG*

INDIAN FIRE PUMP

D. B. Smith & Co., 406 Main St., Utica, N. Y.
Send catalog on INDIAN FIRE PUMPS.
NAME .....
ADDRESS .....
CITY..... STATE.....

A COMPLETE LINE

ROTARY and CENTRIFUGAL PUMPS *from* 100 *to* 1500 *Gallons Capacity*

THE Hale Fire Pump Co. makes a complete line of Standard Fire Engine Pumps, both Rotary and Centrifugal, including Rotary Booster Pumps.

This line extends from the Hale ZMM "Multi-Service" Centrifugal of 1500 gallons capacity to the Hale Type H Rotary Booster Pump of 100 gallons capacity.

Every Hale Pump sold to meet a National Board of Fire Underwriters' specified capacity *will substantially exceed that rated capacity in both volume and pressure.*

Write today for the catalog and folders on the Complete Line of Hale Pumps

HALE FIRE PUMP COMPANY
708-716 Spring Mill Avenue
CONSHOHOCKEN, PA.

AFTER all, a good badge is a sensible investment. Not everyone can wear a fireman's emblem of service. You men who have devoted your lives to saving life and property should be proud of your badge.

You will be if you wear a BRAXMAR BADGE. Over fifty-five years of experience goes into every badge you buy.

Catalog on request.

C. G. BRAXMAR CO., 242 West 55th Street, New York

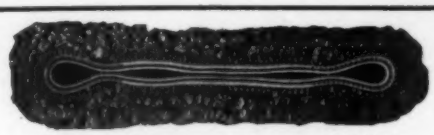
BRAXMAR BADGES

Standard for Over Fifty-Eight Years

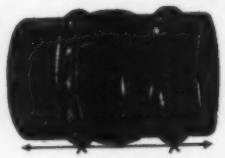
H.O.R.
MECHANICAL
SIREN

Rigidly mounted on engine block of fire apparatus and direct-connected to fan belt. No battery current, not affected by weather, finger-tip control, greatest sound at high speeds. Send for literature.

LOUDER • ECONOMICAL • DEPENDABLE
H. O. R. CO., 10 Broad St., Stapleton, Staten Island, N. Y.



This is the new LIGHT WEIGHT BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive Chicago, Illinois

HEWITT-GUTTA PERCHA FIRE HOSE

A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose
Manufactured by
HEWITT RUBBER CORPORATION
BUFFALO, N. Y.
"Territories Available"

CRACKERJACK FIRE HOSE

The hose with an unsurpassed reputation for QUALITY and SERVICE that has made it the STANDARD OF THE WEST for over 25 years.

◆

COMPLETE INFORMATION UPON REQUEST

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THE AMERICAN RUBBER MANUFACTURING CO.
OAKLAND, CALIFORNIA
Dealers in All Parts of the Country

CONVENTION DATES

July 11 — LITCHFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Next meeting, Terryville, Conn. Secretary, Captain Wesley Billings, Thomaston, Conn.

July 11-13—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 10th Annual Convention, Maniwotoc, Wis. Secretary, Chief A. V. Simon, Ladysmith, Wis.

July 12-13—MARITIME FIRE CHIEFS' ASSOCIATION. 24th Annual Convention, Sydney, N. S. Secretary, G. P. Ryder, St. Stephen, N. B.

July 14-16—TEXAS FIRE DEPARTMENT INSTRUCTORS' CONFERENCE. Annual Conference, Texas A. & M. College, College Station, Tex. Director, H. R. Brayton, Box 119, College Station.

July 18-21—FLORIDA STATE FIRE COLLEGE. 9th Annual College, Daytona Beach, Fla. Secretary, F. C. Pfaender, Florida State Hospital, Chattahooche, Fla.

July 18-22—TEXAS FIREMEN'S TRAINING SCHOOL. 9th Annual School, Texas A. & M. College, College Station, Tex. Director, H. R. Brayton, Box 119, College Station.

*July 20—NASSAU COUNTY FIREMEN'S ASSOCIATION. Next Meeting, Atlantic Hook and Ladder Co., Carleton Ave., Port Washington, L. I., N. Y.

July 20-23—COLORADO STATE FIREMEN'S ASSOCIATION. 27th Annual Convention, Fire College and Tournament, Brighton, Col. Secretary, Clinton Turnbull, 215 Boston Bldg., Denver, Col.

July 25-27 — DOMINION ASSOCIATION OF FIRE CHIEFS. 30th Annual Convention, Saulte St. Marie, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

*July 25-29—WEST VIRGINIA FIRE SCHOOL. 8th Annual School, West Virginia University, Morgantown. Address G. R. Spindler, Director of Fire Service Extension Schools, Morgantown.

Aug. 2-4—WISCONSIN PAID FIREMEN'S ASSOCIATION. 31st Annual Convention, Eau Claire, Wis. Secretary-Treasurer, George Johnson, 1609 West Boulevard, Racine, Wis.

Aug. 8-11—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, New Bern, N. C. Secretary, John Miller, Concord, N. C.

Aug. 9-12—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. 6th Annual Convention, Sherbrooke, Que. Hon. Secretary-Treasurer, Chief Robert Harrington, Fire Dept., McColl-Frontenac Oil Co., Ltd., Suite 8, Hotel Windsor, Montreal, Que.

Aug. 9-10—VIRGINIA FIRE CHIEFS' ASSOCIATION. 10th Annual Convention, Luray, Va. Secretary-Treasurer, E. H. Rouse, Orange, Va.

Aug. 9-11—MICHIGAN STATE FIRE CHIEFS' ASSOCIATION. 13th Annual Convention, Occidental Hotel, Muskegon, Mich. Secretary, George F. Dansbury, Grosse Point Farms, Mich.

Aug. 9-12—VIRGINIA STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Luray, Va. Secretary, O. W. Dabney, Staunton, Va.

Aug. 16.—VERMONT STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Poultney Hotel, Poultney, Vt. Secretary-Treasurer, W. R. Adams, Vergennes, Vt.

Aug. 16-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 66th Annual Convention, Saranac Lake, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 17-19—INDIANA FIREMEN'S ASSOCIATION. 22nd Annual Convention, New Albany, Ind. Secretary, Arnold Meister, Fire Headquarters, Anderson, Ind.

Aug. 19-20—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 55th Annual Convention, Milford, Conn. Secretary, D. W. Harford, 10 Chestnut Street, South Norwalk, Conn.

Aug. 23-27 — NORTHERN PENNSYLVANIA FIREMEN'S ASSOCIATION. Annual Convention, New Castle, Pa. Secretary, Paul J. P. Donley, Sharon, Pa.

Aug. 29-Sept. 3—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. 14th Annual Convention. Atlanta-Biltmore Hotel, Atlanta, Ga. Secretary-Treasurer, George J. Richardson, A. F. of L. Bldg., Washington, D. C.

Sept. 6-8—MARYLAND STATE FIRE SCHOOL and FIRE CHIEFS' CLUB OF MARYLAND. State Fire School and Meeting of Club, University of Maryland, College Park, Md. Director, Prof. R. B. Criswell, University.

Sept. 7-8—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 18th Annual Convention, Newark, Del. Secretary, Warren W. Pettyjohn, Dover, Del.

*Sept. 8-10—TENNESSEE FIREMEN'S ASSOCIATION: 8th Annual Convention, Monteagle, Tenn. Secretary-Treasurer, Joe J. Martin, Nashville, Tenn.

Sept. 12-14—OREGON FIRE CHIEFS' ASSOCIATION. Annual Convention, Pendleton, Ore. (At time of Round Up Week.) Secretary, Thomas Coates, Tillamook, Ore.

Sept. 12-15—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. 43rd Annual Convention, Lord Baltimore Hotel, Baltimore, Md. Secretary, Irvin Shulsinger, 7 East 42nd Street, New York City.

Sept. 12-15—LOUISIANA STATE FIREMEN'S ASSOCIATION. 33rd Annual Convention, Minden, La. Secretary, T. E. Wright, Houma, La.

Sept. 14-15—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 13th Annual Convention, Trenton, Mo. Secretary-Treasurer, M. J. Mulvoy, 3500 South Grand Blvd., St. Louis, Mo.

Sept. 15-17—INTERNATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS. Annual Convention, Atlantic City, N. J. Secretary, Dr. Harry M. Archer, 47 West 85th Street, New York City.

Sept. 19-22—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 45th Annual Conference and Fire School. Salt Lake City, Utah. Secretary, ex-Chief Jay W. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.

Sept. 20-21—IOWA FIREMEN'S ASSOCIATION. 61st Annual Convention, Belle Plaine, Iowa. Secretary-Treasurer, Paul A. Soener, Independence, Iowa.

Sept. 20-22—GREAT LAKES FIRE CHIEFS' ASSOCIATION. Annual Convention, Kokomo, Ind. (Jointly with Indiana State Fire Chiefs' Association.) Secretary-Treasurer, Chief R. E. Mottesheard, 4501 Schaefer Road, Dearborn, Mich.

Sept. 20-22—INDIANA STATE FIRE CHIEFS' ASSOCIATION. 12th Annual Convention, Kokomo, Ind. (Jointly with Great Lakes Division, I. A. F. C.) Secretary, Archie McCabe, Muncie, Ind.

Sept. 23-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION and NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. 61st Annual Convention, Atlantic City, N. J. Secretary, Firemen's Association, Evan F. Benners, 602 Chamber of Commerce Bldg., Newark, N. J. Secretary, Chiefs' Association, Fred A. Trowbridge, Morristown, N. J.

Sept. 26-29—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 16th Annual Convention, Santa Barbara, Cal. Secretary-Treasurer, Harry E. Strasser, P. O. Box 506, San Diego, Cal.

Sept. 27-30—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 66th Annual Conference, Roosevelt Hotel, New Orleans, La. Secretary-Treasurer, Ex-Chief James J. Mulcahy, 16 Franklin Ave., Yonkers, N. Y. Chairman, Exhibits, Chief James T. Keegan, Salvage Corps., 227 Washington Street, Newark, N. J.

Sept. 27-30—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. 38th Annual Meeting (during I. A. F. C. Convention), Hotel Roosevelt, New Orleans, La. Secretary-Treasurer, Chief J. Ray Pense, Stillwater, Okla.

Oct. 4-6—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 59th Annual Convention, Lebanon, Pa. Secretary, Chief Charles E. Clark, P. O. Box 217, Wayne, Pa.

Oct. 18-20—ILLINOIS FIREMEN'S ASSOCIATION. 51st Annual Convention, Père Marquette Hotel, Peoria, Ill. Secretary, Asst. Chief Roy W. Alsip, Champaign, Ill., or Chief Frank Hazzard, Peoria.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 57th Annual Convention, Freemont, Neb. Secretary-Treasurer, Louis A. Novak, Room 5, Koehn Bldg., Norfolk, Neb.

Oct. 19—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular Meeting, Halstead Manor Fire House, Mamaroneck, N. Y. Secretary, Captain Howard Geer, Fire Headquarters, Rye, N. Y.

Oct. 21-22—ALABAMA STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, Mobile, Ala. Secretary, George E. Crossett, 1916 6th Ave., North, Birmingham, Ala.

*July 13-16, 1939—ILLINOIS FIRE COLLEGE. 14th Annual Fire College, University of Illinois, Champaign-Urbana, Ill. Director, L. H. Provine, at the University, or Secretary, Illinois Firemen's Association, Asst. Chief R. W. Alsip, Champaign, Ill.

*The notices marked with an asterisk are either appearing for the first time or have been changed since the preceding issue.

Aid for Fire Department from PWA

(*Continued from page 293*)

includes funds for purchase of fire-fighting equipment.

Sparta, Alleghany Co., N. Car.—PWA grant of $26,609 for water works system provides for purchase of fire equipment.

As the PWA will close its books for grants on September 30, it is necessary that all applications be filed before that date. Applications should be sent to the local regional office of the PWA rather than to Washington.

A list of regional directors, with the states included in each district, is given below:

Regional Directors of the PWA

Maurice E. Gilmore, New York, N. Y., Region 1—Maine, New Hampshire, Vermont, New York, Massachusetts, Connecticut, Rhode Island, Pennsylvania, Maryland, Delaware and New Jersey.

David R. Kennicott, Chicago, Ill., Region 2—Wisconsin, Michigan, Illinois, Indiana, Ohio and West Virginia.

Howard T. Cole, Atlanta, Ga., Region 3—Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi and Florida.

Robert A. Radford, Omaha, Neb., Region 4—Montana, Wyoming, North Dakota, South Dakota, Nebraska, Minnesota, Iowa and Missouri.

George M. Bull, Fort Worth, Tex., Region 5—Colorado, New Mexico, Kansas, Louisiana and Texas.

Kenneth L. Godwin, San Francisco, Cal., Region 6—California, Nevada, Utah and Arizona.

Claude C. Hockley, Portland, Ore., Region 7—Washington, Oregon and Idaho.

Requests for information, application forms, etc., should be addressed to these Regional Directors instead of to the PWA at Washington.

To Catch "Higher-Ups"

By a vote of more than two to one, The Senate of New York State passed a bill which would permit convictions for arson on uncorroborated testimony of an accomplice. The bill was designed to make it possible to get the "higher-ups" of arson rings.

Although such a bill was recommended by Gov. Lehman as part of an anti-crime program back in 1935, it was opposed because of party differences.

Ex-Chief Corning Retires

Claude W. Corning, former Chief of the Seattle, Wash., Fire Department, has retired from the service, following his demotion by Mayor Langlie to the rank of Battalion Chief. This step was a surprise to his friends in the department.

Chief Corning went on a vacation April 30, when he was succeeded by William Fitzgerald, and he returned to the city after attending a convention of the Shriners at Los Angeles.

He was a member of the department for twenty-five years. He joined on April 2, 1913, was promoted to Lieutenant on May 27, 1919; to Captain, July 23, 1922, and to Battalion Chief on January 1, 1929. On January 10, 1932, the Mayor asked the members of the department to select their own Chief and Corning was selected. He was reappointed by succeeding Mayors.

FALSE ALARMS

LIMITED SCOPE

A soap box orator picked the little square at the side of the fire house for his meeting. He was downing every thing. The desk man leaned against the iron chain across the station door, and listened intently.

The orator was urging his listeners to strike. He told about conditions in a nearby mill.

He shouted, "Only twelve dollars a week! How can a man be a Christian on twelve dollars a week?"

The desk man shouted the answer.

"How can he be anything else?"

There is always a catch. This is a free country with a free speech, free press, and a man can say what he thinks, except to his wife, his boss, or a six-foot guy with a protruding jaw.

INTRODUCTIONS

Away from the city, approaches to the old form of square dances are still in vogue. In one summer community, at a dance sponsored by the firemen to attract contributions of the summer residents to the department's apparatus fund, a rather sober fellow found that he had for the partner of a particular dance, a very vivacious, over-decorated young lady.

She looked at her partner and remarked:

"I bet you don't know who you are dancing with, you lucky boy."

The fellow confessed that he did not and she told him. She thought that her name, which meant something in the city, might also be impressive in the country.

The fellow looked at her and asked:

"Do you know who you are dancing with?"

Without waiting for an answer, he said, "No one," and walked away.

As one young married woman advised another young lady:

"If at first you don't succeed, cry, cry again."

TO THE TEST

The fireman back stage commented to a scene shifter what a funny lot people are. He said:

"Now you tell some one that there are 270,000,061 stars in the sky, and he'll believe you. But if he sees a sign, 'No Smoking,' he seems to have his doubts about it."

As one girl remarked, "Everything I want to do is either illegal, immoral or fattening."

UNDEVELOPED

The boys complained and that meant that MacGregor who was chef at the station for that week, had to complain to the grocer.

He marched into the grocery store, as though ready for battle, and put a bag on the counter.

The grocer looked into the bag and asked:

"What's wrong with those eggs?"

"Too small for their age."

As Confucius remarked, "It is better to have halitosis than no breath at all."

OBJECTIONABLE

Sam was an old colored man who was very much liked, even though, as a worker, he was a poor financial risk. Given plenty of time, he did his work well, but he certainly knew most every one in town. He was cleaning the window in front of the station, when a town character went by.

With much disgust, he said, "Dere goes dat slaternly Mandy Jones wid her ten pickaninnies. She sho do look repugnant."

The man at the desk seemed much surprised.

"What again?"

THE PROPER ANGLE

Mike was a town character—he was good at heart, a very hard worker, but surly, unless one knew him well.

He was engaged to grade the grounds about the new fire station, so that they could be seeded and landscaped. A benevolent old lady who delighted to give sugar to horses, watched him lead his horse around the ground.

"What kind of a horse is it—a male or a female?"

Mike looked at her with disgust.

"What difference would that make to anybody but a horse?"

OBSERVATIONS 1938
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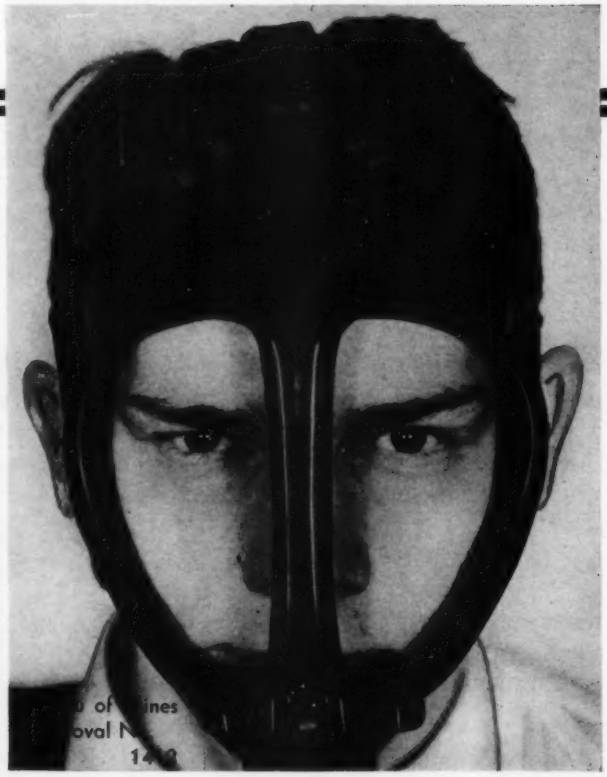
THE BOYS OF MICHIGAN CITY, IND. FIRE DEPT. ELECTROCUTE RATS. GOOD PUNISHMENT FOR ANY "RAT" - EH ?
FIREMEN MAKE CHECKER GAMES PLAYED SIZ MANNED WITH - MARBLES
ASST. CHIEF - EXPERT BATON THIRLER, HAS A DRUM MAJORETTE DAUGHTER WITH RINGLING CIRCUS
IN LOUISVILLE, KY.
CHIEF R. HOUSTON OF CINCINNATI, OHIO HAS HIS OWN
CHARLEY McCARTHY, F.D. SEC'Y.
340 HS of Good Nature In A Gorgeous Fire House, FIRE ALARM OPERATOR "HAPPY" BOSTEL EAST CHICAGO, IND.
'MAC' AND 'PATSY' AND THEIR LITTER
CHILDREN LIVE ON THE HEADQUARTERS APPARATUS - FLOOR -
(THE FIRE FIGHTERS RAISE CHICKS IN THE BOILER ROOM
FIRE CHIEF YOUNG IS AN EXPERT TAXIDERMIST AND ALSO
ELDORADO, ILL. HE HAS A BIG COLLECTION OF WORLD WAR RELICS
The I.A.F.C. has a Real Sweetheart, Betty Lou Behrman, Capt. Fry's Kiltie Band, Oklahoma City, Okla. Elected 1937 'SWEETHEART'
SALAMANCA, N.Y. Chief Andy Leahy Invents and builds practical Fire Dept. appliances - and he uses them to best advantage. THE CITY PROFITS THEREBY!
AL HERRING ZOO
MURPHYSBORO, ILL. Chief Herring made the City Zoo one of the great attractions but he won't stand for any monkey-business in the Fire Dept.
DUKE
AL IS ALSO THE CEMETERY COMMISSIONER.
FRANK LOGAN SOUTH BEND, IND. FIRE DEPT. GIVES REGULAR WEEKLY FIRE PREVENTION RADIO TALKS OVER WFAM AND WSBT - The 4-11 PROGRAM !
HAMBURG, N.Y. GEORGE B. ABBOTT, Former Mayor and Fire Chief of SALAMANCA, N.Y. Father of the First Building entirely devoted to FIRE PREVN. Exhibits, is father of George Abbott, the successful New York Theatrical Producer
OWENSBORO, KENTUCKY ALL OF CHIEF CURETON'S MEN ARE A1 FIRST AIDERS
HOT LIPS - HARRISBURG, Illinois style



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Acme FULL VISION Gas Masks Nos. 4 and 4A, with Acme Type 1-OV (Organic Vapors) Canisters, now carry United States Bureau of Mines Approval Numbers 1418 and 1418A.

Full Vision is an original and exclusive Acme feature, enabling the wearer to see exactly the same as when not wearing a mask—a most important contribution to safety. Moreover, the Acme FULL VISION Face Piece is the lightest weight Government Approved Face Piece, and the complete masks are the lightest which have yet received the Bureau of Mines Approval. Other *Acme Features* include replaceable Safety Glass Lenses, scientifically designed Head Harness which eliminates all pressure points on the wearer's forehead, and Dead Air Check Valves to prevent exhaled breath from accumulating in Fresh Air Ducts.

Acme FULL VISION Masks are the utmost in Safety, Comfort and Value. Write for Complete Information and Bulletins on Acme Full Vision Gas Masks or Full Vision Supplied-Air Respirators (Hose Masks).

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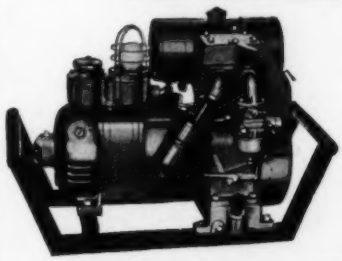

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Larger sizes are available. Illustration to the right is 5 KW 4-cylinder Portable Unit. Automatic remote control. Write for complete information.

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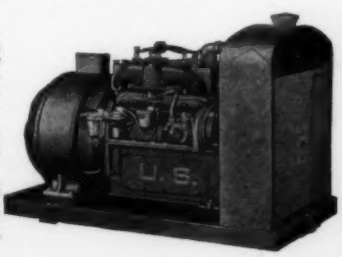

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7-38

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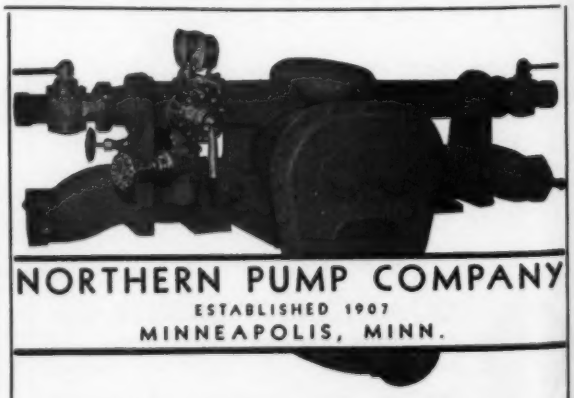

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ESTABLISHED 1907
MINNEAPOLIS, MINN.

New York Chiefs Meet at Elmira

During the Mayor's Conference of New York held at Elmira, N. Y., the New York State Fire Chiefs Association held a three days' meeting and course of lectures, with about 150 Chiefs present.

Arthur Chambers, former Chief of the Yonkers Fire Department, presided.

Chief John J. Brennan, Pelham Manor, formerly a Battalion Chief of the New York Fire Department, gave a talk on hose lines inside and outside of buildings, and he explained the care of fire hose. By means of a blackboard, he illustrated friction losses, nozzle sizes and pressure.

Thomas P. Brophy, Chief Fire Marshal, New York City, spoke on fire incendiarism and arson. He told how the pyromaniac burns to satisfy a personal craving, while the arsonist burns for profit. He said that his staff obtained convictions last year in about sixty per cent of the arson cases.

The officers elected were as follows:

President, Chief Roy J. Kirsch, Kenmore, N. Y.; First Vice-President, W. W. Shoemaker, Canandaigua; Second Vice-President, George W. M. Brown, Newburgh; Secretary-Treasurer, Chris W. Noll, Poughkeepsie re-elected; Directors, Michael J. Grimley, Mechanicsville and Osbourne G. Smith, Larchmont.

Other speakers were: Chiefs John Gibson, Mt. Vernon and Michael J. Fleming, Albany; William T. Carter, Albany, N.Y. Telephone Company, and George L. Phillips, insurance department of the Consolidated Edison Company of New York, Inc. Chief Gibson conducted a round table discussion of Fire Department problems; Chief Fleming spoke on metal ladders; Mr. Carter, the use of the telephone in fire alarms, and Mr. Phillips, fighting fires in electrical utility structures and properties.

Mr. Phillips advocated the installation of a private, one-way line between telephone central office and the home of the Chief, or other responsible individual, as a fire protection measure. The service, he said, should be on a 24-hour schedule.

More than 100 Chiefs qualified for certificates signifying completion of the New York State Municipal Training Institute courses, conducted during the convention.

Albert H. Hall, Chief of the Bureau of Public Service Training of the New York State Department of Education, told the Chiefs that training institute certificates would be furnished by mail.

The certificates are granted under authority of the Regents of the University of the State of New York. The curriculum of the institute was prepared by a committee of Fire Chiefs and representatives of the Mayors Conference and the State Bureau of Public Service Training.

Boughner, Grand Rapids, to Resign

Fire Marshal George T. Bougher, Grand Rapids, Mich., plans to resign next September, at which time he will have rounded out fifty years service in the department.

Fred P. Higgins, Assistant Fire Marshal and long in the department, automatically comes in line for promotion.

Capt. McCarthy Re-elected

At the annual meeting of the Massachusetts Fire Prevention Association Captain James McCarthy, of Weymouth, was re-elected president. Other officers chosen were Lieutenant Theodore Munroe, Haverhill, Vice-President; Albert C. Maxwell, Reading, Secretary-Treasurer; Directors, Deputy Chief Arthur E. Miller, Malden; Chief Joseph E. Kelley, Danvers; Deputy Chief Arthur L. Marshall, Cambridge; Chief Thomas A. Qualey, Medford, and Supt. Lorton C. Walden, of the Worcester Protective Department. The April meeting was held in Worcester and the May meeting, postponed a week because of Memorial Day, was held in Malden on June 6.

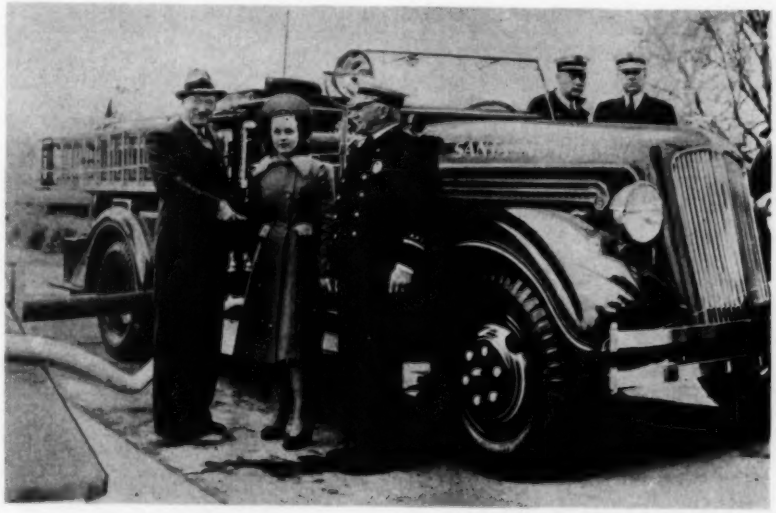
HARRY BELKNAP

Deanna Durbin Christens Pumper

Deanna Durbin, motion picture star and featured radio singer, christened the new pumper of the Santa Monica, Cal., Fire Department.

The apparatus, a 750-gallon Seagrave triple combination pumper has a 100-gallon water tank, has space for 1,400 feet of 2½-inch hose, and a special compartment at the rear for 1½-inch hose. This small hose is permanently connected to the 1½-inch discharge outlet leading from the pump. Chief Mohr claims that this method is advantageous.

Provisions were made for mounting a 1,100 g.p.m. monitor deck gun directly over the basket shown in the photograph.



At the Christening of the New Pumper

Left to right, Mayor Gillette of Santa Monica, Deanna Durbin, and Chief William Mohr.

Fairfield Chiefs Hear of Gasoline Truck Hazards

An address pointing out the hazards of the transportation of gasoline through streets during traffic hours and other perils incident to gasoline trucks was a feature of the last meeting for the season of the Fairfield County Fire Chiefs' Emergency Plan. The address was given by former Deputy Chief James Deasy, of the New York Fire Department.

The meeting, which was held at the Redding Ridge, Conn., Fire House, on Wednesday evening, June 29, was presided over by Chief Thomas Boyle, Noroton, President, and the members were welcomed by Harold Samuelson, First Selectman; Frank Stolle, Second Selectman; Fire Commissioner Jesse Sanford, and Chief Bergquist, all of Redding Ridge.

Leon Meany reported a balance after all expenses had been paid for the annual dinner. He reviewed the entertainment features of the past meetings of the Plan and promised even better and more instructive speakers for the sessions next year.

Chief Deasy, in opening his address, stressed the need for the education of volunteer firemen. He pointed out the great hazards incident to the transportation of gasoline in trucks through crowded thoroughfares, and in the delivering of gasoline to filling stations. He cited several instances in which accidents had occurred through carelessness in handling gasoline and other inflammables during delivery. He suggested a number of points that would guide Chiefs in handling fires in gasoline trucks so as to minimize the hazard. He advocated the setting apart of a complete section of every truck for the storage of either foam or water, to guard against the dangers of ignition.

At the conclusion of his address, Chief Deasy was elected an Honorary Member of the Plan.

Arthur F. Bell, in charge of the Nassau County, N. Y., Firemen's School, spoke on the subject of the education of volunteer firemen.

It was announced that the second Sunday in September would be Connecticut Day at the Firemen's Home at Hudson, N. Y., and members were urged to be present.

The Plan voted to present the name of Captain John Moehring, its Secretary, as a candidate for Secretary of the State Firemen's Association at the August convention.

Program Drawn for Dominion Chiefs

Announcement has been made of the program arranged for the thirtieth annual convention of the Dominion Association of Fire Chiefs, which is to be held at Sault Ste. Marie, Ont., July 25 to 27.

At the banquet, the main speaker will be Sherman V. Coultes, Fire Marshall of Illinois.

Ernest Lavigne, Provincial Fire Marshal of Quebec, will explain the Fire Protection Act of the Province of Quebec.

"Sprinkler Systems, Their Value, Care and Maintenance," is to be described by W. Davis, Engineer, Grinnell Company.

Motion pictures will be shown on the use of fog nozzles in fighting oil fires. Comments will be made by Provincial Fire Marshal W. J. Scott, Ontario.

Capt. J. O'Connor, Hamilton, is to speak on drill schools.

Also present will be Chief Daniel J. Tierney, Arlington, Mass., President of the I.A.F.C., and Percy Bugbee, of the N.F.P.A.

On the second day of the gathering, there is to be a trip to the Algona Steel Mills and Paper Mill, and in the evening, a boat trip through the locks of the Canadian and American Canals on a U. S. Coast Guard cutter. Special entertainment has been provided for the ladies.

Westchester Chiefs Consider Trends in Fire Service

The members of the Fire Chiefs' Emergency Plan, of Westchester County, N. Y., listened to a paper on the "Trends and Developments in the Fire Service," at the regular meeting of the Plan, held at the house of the Hartsdale, N. Y., Fire Company, on the evening of Wednesday, June 15. The paper was read by Robert H. Lockwood, Associate Editor, FIRE ENGINEERING.

The Plan was welcomed by the Chairman of the Fire Commission, William Van Dorn, and by Chief M. N. Rose, Hartsdale. There were 149 present at the meeting. A report by the Dinner Committee showed that all bills were paid and there was a surplus of $33 in the treasury.

The new assignment card, prepared by the committee headed by Assistant Chief John W. Vandewater, Hastings-on-Hudson, was shown on the screen, and verification or correction by members present was asked. It was hoped to have the card ready for distribution in a few weeks.

A question as to what was covered by the amount subscribed by the various municipalities in the new financing plan, brought out the fact that the dues of the Mayor, Fire Commissioner, Chief and Assistant Chief of the Fire Department, were included in the subscription.

There was a lively discussion as to the authority and duties of fire patrolmen at fires. In some instances the members of the patrol are sworn in as special police officers and in others they are not. Several of the speakers said that members of the patrol combined salvage work and rescue work with their police duties.

Another subject that elicited much discussion was as to the type of nozzle to be used in case of fire in the large open area of a store.

It was agreed, however, that the larger the stream the better in such a case, where a quick fire was involved and where loss of life was a danger. Water deflected on ceiling was suggested as a help in distribution in such a fire.

Five new members were elected. Refreshments were served by the local department after the meeting.

No. 17
FIRE FACTS
BY OTIS SMITH
ONLY KNOWN CASE OF BULB WITHSTANDING FIRE AND EXPLOSION.
NORMAL
BULB IN FIRE
BULB STAYED LIT THROUGH FIRE AND EXPLOSION OF AMONIA TANK IN SAME ROOM. INTENSE HEAT SOFTENED BULB AND DISTORTED IT.
(OKLAHOMA CITY-1938)
A BALTIMORE, MD., JUNK DEALER CARRIES A BARREL WITH HIM TO COVER HYDRANTS. THIS ALLOWS HIM TO PARK HIS TRUCK IN FRONT OF HYDRANTS WITHOUT BEING CAUGHT.
(THANX TO CHIEF O'LEXEY, JESSOP, MD.)
CARBON DIOXIDE GAS EXPANDS 450 TIMES AS IT LEAVES THE NOZZLE. THIS QUICK EXPANSION ALSO DRIVES THE GAS INTO ALL CREVICES.

Low Fire Loss

According to the annual report of Chief C. W. Pittman, Urbana, Ill., there were 176 alarms received during the year. The loss per fire has averaged $19 and the loss per capita, 23⅓ cents.

PWA Money for 63 New Fire Stations

The Public Works Administration at Washington has approved grants for thirty-one cities to be used in the erection of sixty-three new fire stations and reconstruction of four old ones. The grants represent 45 per cent of $2,963,104, the estimated cost of the work. The remaining 55 per cent must be provided by the municipalities benefiting.

Cities and towns to get the new fire stations are: Los Angeles, Cal (34 new and 4 reconstructed); Hanford, Cal.; De Pere, Wis. (combined City Hall and Fire Station); San Mateo, Cal.; Shreveport, La.; Clarksville, Tenn.; Concord, Cal.; E. St. Louis, Ill. (combined Police and Fire Station); Frederick, Md.; Fresno, Cal.; Hartford, Conn.; Livingston, Tex. (combined City Hall and Fire Station); Alexandria, Minn. (combined City Hall and Fire Station); Berkeley, Cal.; Elkhart Lake, Wis.; Saco, Me.; Tyler, Tex.; Wheeling, W. Va.; Brooklyn Park, Md.; Ellicott City, Md.; Albermarle, N. C. (combined City Hall and Fire Station); Bremerton, Wash.; Santa Maria, Cal.; Ada, Okla.; Alma, Wis. (combined City Hall and Fire Station); Emden, Ill.; Glens Falls, N. Y.; Goldsboro, N. C.; Oakland, Me.; Shipley, Md., and Bicknell, Ind. (combined City Hall, Police Station and Fire Station).

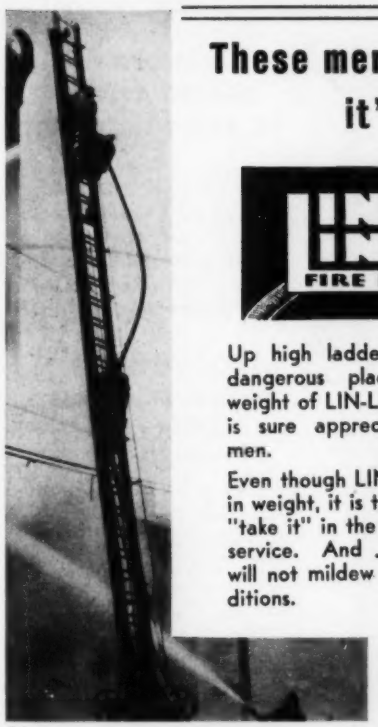
FREE TO FIRE CHIEFS

Fire chiefs who are seeking increased appropriations for more fire alarm boxes or fire fighting equipment may help their cause by furnishing the Mayor of their city a copy of

"INFLATION AND FIRE CHIEFS"

by ROGER W. BABSON as it appeared in FIRE ENGINEERING for February, 1937. Copies will be sent free to any chief who writes:

BABSON'S STATISTICAL ORGANIZATION, INC.
By ROGER W. BABSON, *President*
Babson Park, Mass.



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LIN-LINED FIRE HOSE

Up high ladders or in tight, dangerous places, the light weight of LIN-LINED Fire Hose is sure appreciated by your men.

Even though LIN-LINED is light in weight, it is tough enough to "take it" in the hardest kind of service. And . . . LIN-LINED will not mildew under any conditions.

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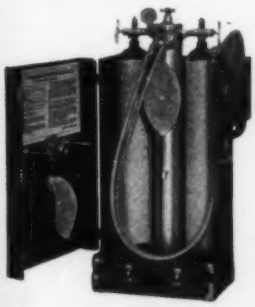

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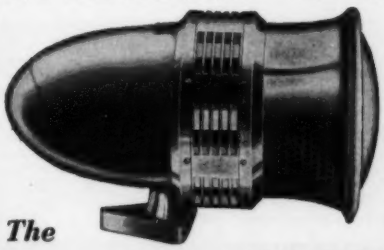

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THIS OFFER SHOULD APPEAL TO EVERY FIREMAN!

We don't believe any such offer was ever made before . . . an outfit that will keep you comfortably warm and dry in the most severe weather for only $22.35. Read the descriptions then act AT ONCE.

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Firemen's Coat and Bunker Pants
Combination Suit No. 101

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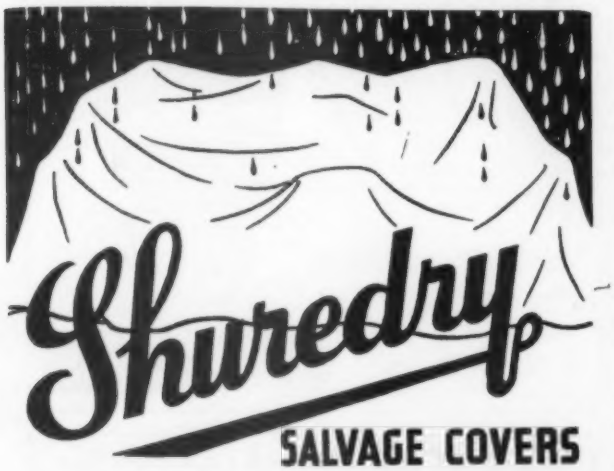
MIDWESTERN MFG. CO.
Mackinaw, Illinois



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Progressive Fire Chiefs everywhere recognize the necessity of improved salvage work if they are to better their records. Shuredry Salvage Covers have been used to illustrate salvage talks by leading Fire Chiefs at many conventions. They have been recommended by these practical men in service for dependability, efficiency and real economy to the department. Easy to handle and to spread, they will not crack when folded or stored. They do not sweat and are chemically treated against mildew.

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JULY, 1938

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